Gleanings in Bee Culture

85 years of continuous publication by the same organization.

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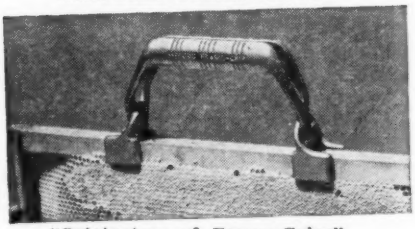

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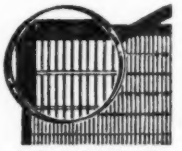

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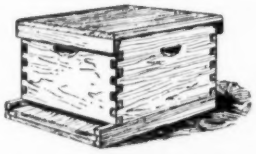

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Monthly HONEY Report

WALTER BARTH, Field Editor

ON THE WHOLE, crop conditions this season continue to exceed those of any recent spring, and colony count may also slightly exceed that of a year ago. Should a good honey crop be realized beekeepers might be faced with a tough market. It will be necessary for our industry to put on a vigorous sales promotion program in an attempt to increase past outlets for honey and also to increase per capita consumption.

On the West Coast the outlook is generally good. The state of Washington had an ideal spring for build-up and some colonies showed gains of 60 to 80 pounds of spring honey. Swarming is troublesome. At this writing northern California is having cool unsettled weather which is rough on bees. Vetch is yielding well on good days. Bees in San Joaquin County are barely holding their own on stores. Demand for bees for apple pollination in Santa Cruz County was above average this year. In southern California the honey outlook is good with honey plants at their best since 1952. However, some more rain would be beneficial there.

Speaking of rain brings up the good state of Texas. Beekeepers are getting a fair crop of honey in many areas as apparently the bees are working between showers. Same is true for Oklahoma. Extracting has already started as beekeepers have become anxious to get the crop off.

Prospects are good throughout the southern states although swarming is troublesome. White clover is recovering from the dry weather in recent years and is abundant everywhere. At present, rain, and cool weather in some areas, is holding things up. The demand for queens has been good. In Florida the gallberry and palmetto flows are in full swing at this writing with prospects favorable for good yields. Late bloom of citrus enabled producers to end up with crops equal to last year.

Throughout the Midwest bees are generally in good condition as a result of a good spring build-up. In many areas, such as in parts of Illinois, bees didn't winter too well but are doing well now. Swarming is troublesome. More moisture would be helpful, and it would be nice if Texas could send some along. Very little honey in producers' hands, and what remains with the beekeepers is usually very dark. Honey movement on retail levels is still satisfactory.

It is strange to read of drought conditions in New England with all of the excess rain in other parts of the country. But bees have wintered well there although they came through the winter very short in stores and considerable feeding has been necessary. Some colonies have been lost because of starvation.

Fruit and dandelion bloom has failed to attract its usual number of bee visitors, and that is probably caused by a poor nectar flow brought on by the dry conditions. The weather is good for effective apple pollination but unless rains come soon beekeepers can expect little from clovers. The bees are unusually strong and swarming is a problem. To control swarming many beekeepers are dividing and replacing winter loss.

In New York bees have wintered well but some feeding was necessary in April. Later good weather enabled bees to gather a lot of spring nectar and pollen from willows and maples. These same conditions prevailed in New Jersey and eastern Pennsylvania. A late frost did some damage in central Pennsylvania.

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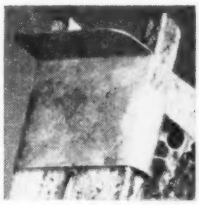

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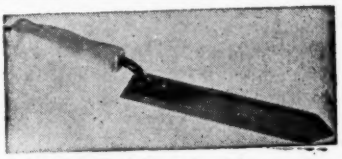

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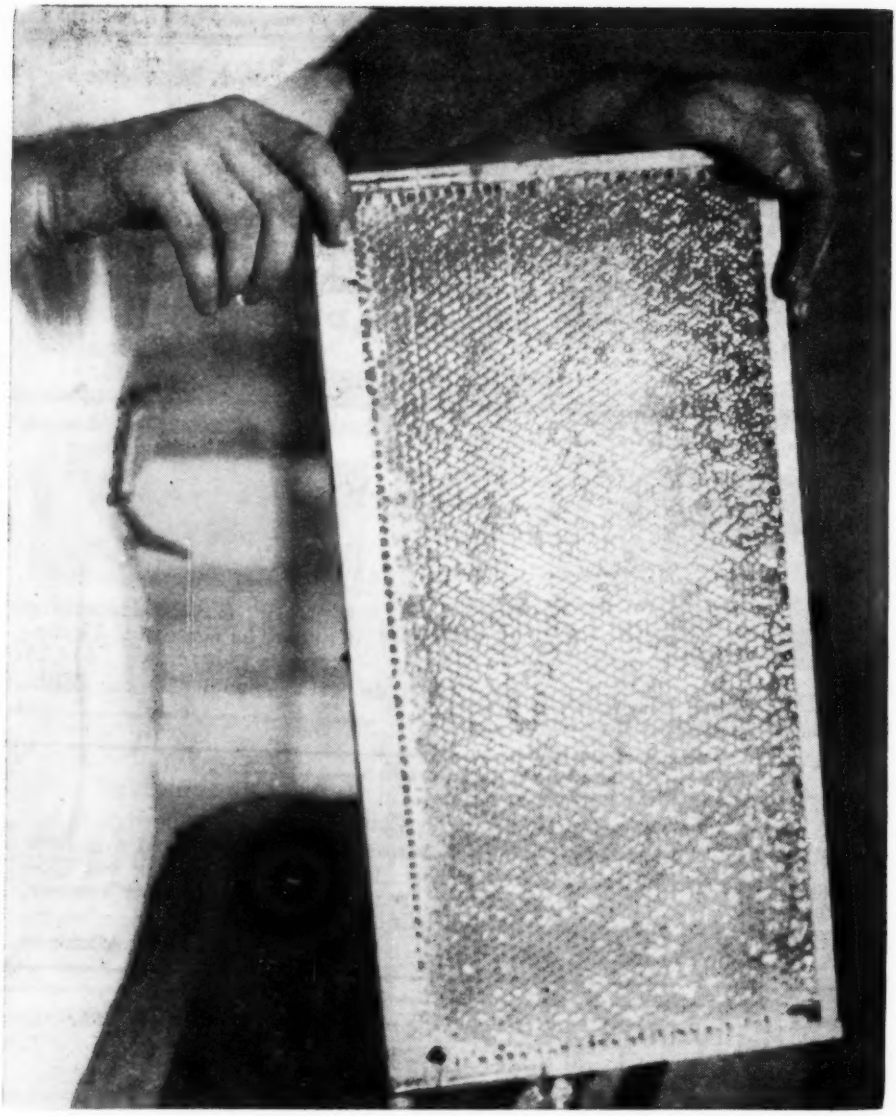

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Chain Reactions Produce

Steady Sales

Says CHAS. W. GOUGET
Glen Ellyn, Illinois

AS A RULE sales are not made by luck. More often they are the result of a combination of planned circumstances that begin with production and end with satisfied customers. This fact is especially true of honey production because most beekeepers and their bees are a part of a community.

Bees are a mystery to most laymen, and anyone who can handle them without being stung to death is watched by his neighbors with mixed emotions of awe, fear, and perhaps just a little envy. Most of the neighbors enjoy watching the beekeeper at safe distances, and the honey house becomes the fascinating spot of interest in the community. This means, of course, that in many cases the local beekeeper is watched through almost every step of his production by customers or prospective customers, and since sales promotion may involve almost any factors that affect sales, sales promotion can begin in the bee yard and start a "chain reaction" that may result in increased sales.

1. Keeping a neat, well-planned bee yard:

A neat, well-kept bee yard along a road or highway will pay off in advertising as well as or better than a well-designed signboard. The whole yard should have a definite plan to give it the appearance of a pleasing unit. The rows of hives should be straight or at least uniform in pattern. They should be painted alike, and no "beat-up" equipment should be used. Shopworn hives arranged in a "catch-as-catch-can" manner may work just as well or better for honey production, but they have little, if any positive advertising value. Today, people are educated to the fact that anything connected with food must be clean, and hives are no exception when they can be seen from a well-travelled road or highway. A well-appointed apiary on a highway is sales promotion at its grass roots.

2. Maintaining a sanitary, efficient honey house:

Again, our modern, improved methods of packaging foods has made most people sanitation conscious so that it is becoming more difficult every day to sell bulk foods or to sell foods that are processed under questionable conditions. Public demand for sanitation in handling foods has led to more rigid regulations for processing foods including honey.

If a visitor can walk around a honey house without sticking to the floor, and the whole place "reeks" with cleanliness and efficiency many sales have been made for all beekeepers. On the other hand, if a customer visits a honey house set up in a dirty chicken house with dust and cobwebs around the windows and doors, many sales may be lost. The sum total of the sales gained or lost in the industry as a result of similar examples may make the difference between a national surplus and a short supply at the end of the honey season.

3. Knowing the honey you produce:

The salesman who must say "I don't know" to a reasonable question about his product may lose a sale because that very question may be the customer's reason for purchasing the item. It becomes imperative, therefore, that the honey salesman or beekeeper like any other salesman, must know his product—its chemical composition, its food value, and its medicinal advantages. Not only must he know this material, but he must be able to transmit the information to others in a convincing manner so that they too may spread the good news.

The fact that honey is one of our few natural, unadulterated foods, places it in a favored position among foods for a real, honest sales build-up. The prospective customer must be convinced that honey is not "just another food", but a fundamental food containing two necessary sugars (dextrose and levulose) which are necessary for the functioning of all normal living cells both plant and animal. This means that this part of the honey is readily absorbed by the human body without the process of digestion and that it is a quick energy food — one that will provide a quick "lift" for that tired, worn-out feeling. In addition, it seems to have medicinal value for colds, hay fever, asthma, and kindred ailments, and it is "kind" to the heart. These facts could be multiplied many times, but a good saleman will emphasize a few essentials that appear to interest the prospective customer. Too much detail or the use of too much scientific terminology may produce negative results. People become bored by detail or by terminology that they do not understand. It is just as important to know how to sell honey as it is to know how to produce it, in fact, selling is often the more difficult of the two because steady sales are not just made by chance. On the contrary, they usually involve fundamental principles and techniques of selling, such as:

4. Knowing your customers:

A green apple will not sell on a red apple market, neither will a brown egg sell on a white egg market, and honey is much the same way. People have strong preferences and prejudices and sometimes these preferences involve an entire community or a particular nationality. Often Polish people prefer a sharp, dark honey, while native born Americans will usually select the lighter types, but perhaps neither honey could be sold in the other's territory. A study of the likes and dislikes of each community will pay off with increased sales. Where possible, this can be determined by "baiting" the customers with several types of honey to determine their major preferences.

5. Putting up an attractive package:

Among the articles on a grocer's shelf honey is an item that must largely sell itself because it is neither a luxury nor a commodity, but instead a kind of nonentity that people must be reminded of if it is to sell among the other attractively packaged articles in a grocery store. It must stand out among "all that glitters" in such a way that it will attract the prospective buyer, and at the same time through the clever, pleasant appeal of advertising on the label make the shopper feel as though he will be better off if he makes the purchase. To accomplish such a result the honey package must have a professional look: neat, clean and sparkling like most of the articles with which it competes. The label must be the "silent" salesman which offers suggestions that emphasize basic human needs such as good food, healthy children, etc. A good salesman will appeal to fundamental human needs.

6. Maintaining an attractive roadside stand:

The roadside stand is merely a larger "package" to attract motorists instead of individual shoppers, consequently the same sales principles apply here as apply to the individual package: The stand must attract attention from a distance because of the design of the building and or the landscaping around it, and or the volume of the articles on display and their arrangement in the stand.

The driveway must be inviting and easily accessible to high speed traffic which means that it must connect with the highway at a rather acute angle. Above all, the service must be friendly and efficient. People enjoy courteous, friendly service, but they do not like to wait. Usually they will return to the stand where they like the service and

the people they deal with. It pays to be liked.

7. Using effective advertising:

Each producer has his own special problem in advertising depending upon the methods used in selling his products. Those who dispose of their honey products through grocers usually resort to attractive window displays to attract the window shopper, and to attractive floor and counter displays inside the store to remind the prospective customer after he enters. Large quantities of honey products are exhibited in conspicuous places to attract attention, while advertising on signs and labels encourage impulse buying by emphasizing human needs. If additional local advertising is done by mail the theme must be short, concise, and objective. Prospective customers will not read long explanations, and often a good cartoon will get an idea across better.

Selling from a roadside stand presents a different problem. Here the problem is to direct the traffic to the stand, and to prevent the motorist from passing the stand as he approaches it. Neat, professionally printed signs scattered around the countryside will remind the motorist of "Honey Acres" on Hwy. 12 while additional signs on Hwy. 12 will direct him further, and perhaps caution him to "Slow down" for "Honey Acres" 500 feet ahead.

A third type of advertising is found in mail-order selling. In this type brochures with pictures are used as a substitute for the actual product. Advertising of this kind holds attention very well but it is the most costly of all the common methods used, consequently the return must justify the expenditure. It is well to remember that the extent to which any advertising is successful depends on how many people look at it, and how many people look at it depends largely on how well the advertising is done. The object is, of course, to keep the advertising out of the waste basket.

8. Maintaining a price that insures a reasonable profit:

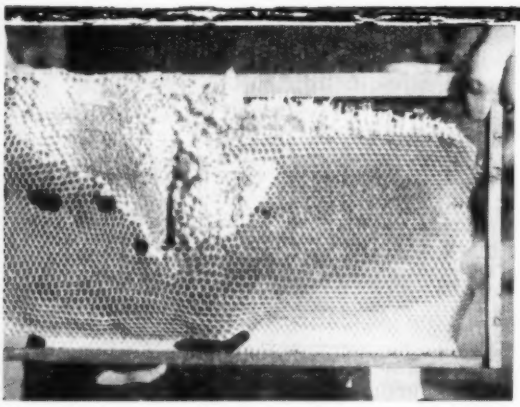
Compared with most manufactured articles the profit on honey has never been reasonable. This fact becomes more meaningful when we learn that a 49 cent tube of tooth paste costs only about seven cents to manufacture, and a small, steel toolbox that retails for about $1.50 at a mail-order house costs only about 30 cents to manufacture. In each case the retail price may be justified by handling charges and taxes, but the important thing is that there is enough of the "spread" left at the end to make it worthwhile for the salesman to want to sell the item. In the selling of honey there is very little "spread" (except on bread) consequently any producer who deliberately undersells his competitors is cheating both himself and them. The more he sells the more he loses, and the more he depresses the honey market until finally no one can make any money at all, and as a result everyone loses. Such a person is a renegade of the honey industry.

9. Joining beekeepers' organizations:

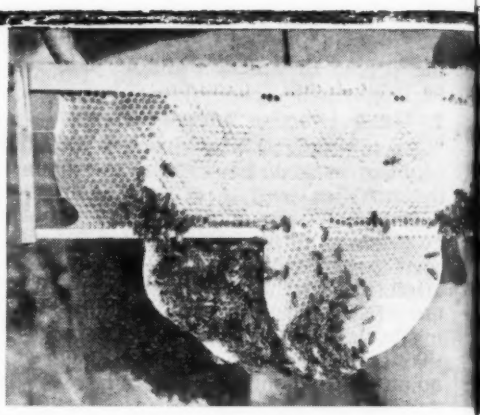
Most of us are "joiners" by nature, and this fundamental human trait provides the impetus for most all organizations. Since improved working conditions and living standards result largely through legislation, such legislation must come about by means of group action. The American Beekeeping Federation was founded to protect the welfare of beekeepers much in the same way as the C.I.O. and the A.F. of L. protects the welfare of labor. Through its program of Conservation Education the Federation has vitalized many pollination problems hitherto unnoticed, or at least not fully realized by farmers or the Department of Agriculture. It has cooperated with Government Marketing Agencies to reduce surpluses so that each beekeeper may not be "forced" to "give away" what he produces; in addition it has influenced legislation toward improving marketing conditions and it has sponsored sales promotion campaigns such as National Honey Week to make the public honey conscious. All this benefits every beekeeper and helps to make his job an easier one.

While the Federation deals largely with the over-all policy for the industry, local organizations deal with specific local problems of production and marketing. The interchange of ideas among members makes for a better in-

(Continued on page 446)



An abnormally thickened brood comb.



Comb extensions built onto the underside of a super frame.

Some Beekeeping Experiments

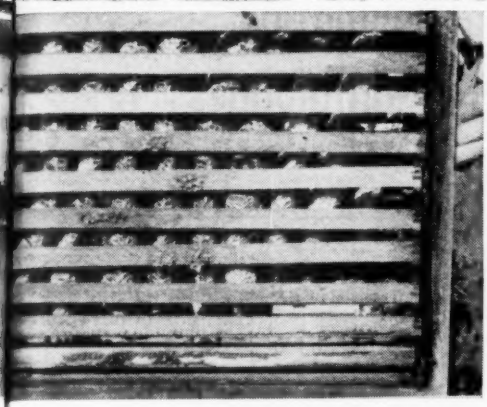
conducted by T. H. G. FARNDEN, Pietermaritzburg, Natal, So. Africa

IT PAYS to stick to the rules in beekeeping as much as in any other occupation. This has been proved to us in a series of experiments and observations made by my friend and me over the past few months, in which we have learned to our mutual satisfaction that bees the world over act in very much the same manner under given circumstances.

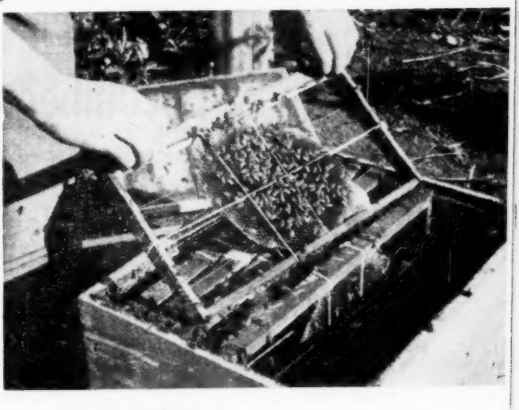
One day, armed with a mild spirit of adventure and the implements of our mutual occupation, we made our way to the apiary and deliberately set out to confound the inmates of the hives to see what would be the outcome. Most ordinary experiments like dropping a small beetle into the hive were glossed over as being unworthy of our attention, for it is a foregone conclusion that the insect will end its days neatly embalmed in a shell of propolis.

But what if by chance you leave a frame out of the brood chamber? The colony seems to need only a certain amount of space in which to work, and so will fill in the gap in the only way known to them—by suspending a comb of the normal dimensions from either the base of the super frame or anything between the two chambers. If the frame is missing from the outside position where there is often more space available, you will probably find an abnormally thickened comb suspended in the same manner. The comb in the picture produced in this way measured a little over three inches at the thickest part. As a result of this experiment we now use only nine well spaced frames per super which gives a slight increase of honey over the usual 10-frame supers.

A frame left out of the brood chamber with no queen excluder interposed between that and the super resulted in a comb of normal dimensions neatly suspended from the base of the super frame above. We learned little from that excepting to establish a well-known fact and to prove that where there is sufficient room to work in the brood chamber the queen makes no attempt to lay in the super. In the next two hives we purposely omitted the comb foundation from the frames. Both hives were facing in different directions. On inspection we found that whereas in one hive the combs had been built in



Honey combs built across the frames from east to west.



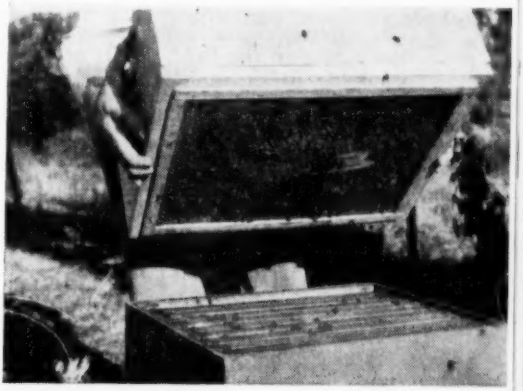
An improved method of tying combs into frames.

regularly, in the other they had been built completely across the frames. It seems that whichever way the hive is facing the bees will always build in an east to west direction if left to their own devices. Another fact had been proved to our satisfaction, and one that may be of use if comb foundation is ever in short supply as it so often has been in the past.

For some time we had experienced difficulty over tying combs from captured swarms into hive frames. Perhaps our bees have sharper teeth than their American sisters, but the tape with which we tied in the combs was always ejected from the hive long before the securing party had time to complete their work. And this as we know means a very badly run household. We now use either fine wire or thin, tough string tied in the manner shown in the picture, and find that the job is always done neatly, while we, and not the swarm, remove the bindings when we are satisfied.

One last experiment was an endeavor to find the most satisfactory way of amalgamating two swarms. We found that the bees in the upper chamber were eating through the paper and infiltrating into the lower in a matter of hours, so that a battle royal ensued and we were left with about the same number of bees as before and a lot of corpses. Then we hit on the plan of removing the center portion from a spare inner cover and replacing it with fine mesh wire which we placed between the two swarms. The bees were then able to smell and generally get used to each other. The following day when we removed the frame the amalgamation was completed without the loss of a single bee. By continuous use of this device we are able to build up our colonies to any desired strength quickly. When not used for this purpose the same gadget serves to cover supers which have to be carried away for extracting.

And the moral of all this? Learn what your bees are capable of and you will reap your reward in your honey crop.



A simple way of uniting two colonies.

XUM

Honeybees Aid Pollination of Cucumbers and Cantaloupes

by A. H. ALEX, Associate Professor, Department of Entomology*

SUMMARY

In an experiment conducted at College Station in 1956, slicing cucumbers yielded an average of 89 bushels per acre in screened plots without honeybees. Where honeybees were provided in screened and open plots, the yield was five and six times greater, respectively.

Cantaloupes in screened plots without honeybees averaged 38 crates per acre. Where honeybees were provided in screened and open plots the yield was more than eight times greater.

Introduction

WHERE CUCUMBERS or cantaloupes are grown on a large acreage, wild pollinating insects seldom occur in sufficient numbers to pollinate the bloom adequately. Although all essential cultural practices are applied, profitable yield may not be obtained if pollination is neglected.

Colonies of bees are rented to some extent by large scale growers of cucumbers. Cantaloupe growers in the Lower Rio Grande Valley and other areas rent bees for pollinating service and more bees are needed in many fields.

The need of pollinators for normal crop yield should be considered when using insecticides. If insecticides are required during the blooming period, those with short residual effect are desirable, and should be applied in the late afternoon and night when bees are not active in the field. Drift of the insecticide to the apiary site should be avoided.

Plan of Experiment

The object of this experiment was to determine the relative crop yield with controlled populations of honeybees in cage plots and open field plots.

The experimental plots were arranged in randomized blocks with plots containing 72 square feet for cucumbers and 81 square feet for cantaloupes. Treatments were: screened plots without honeybees, screened plots with honeybees, and open plots accessible to honeybees and wild bees. These were replicated three times.

Procedure

Initial seeding in March resulted in a poor stand because of inadequate soil moisture. A good stand was obtained from a seeding on April 10 in raised beds eight feet apart for cucumbers and nine feet for cantaloupes. 5-10-5 fertilizer, at the rate of 300 pounds per acre, was distributed in the bottom of the beds. Irrigation water was applied in the adjacent furrows. An additional application of 300 pounds per acre of 5-10-5 was made in the furrows with the third irrigation as the vines formed. At final thinning, the plants were left two per hill with hills four and one-half feet apart in the beds.

Rainfall averaged less than one-third normal and two additional irrigations were made for the cucumbers and three for the cantaloupes.

Insect pests were not serious enough to warrant the application of insecticides. Spotted cucumber beetles occurred only in small numbers. Aphids were well controlled in the open fields by an abundance of convergent lady beetles. Aphids also developed on caged plants and were controlled by

* Progress Report 1936. Texas Agricultural Experiment Station, The Texas A & M College System, R. D. Lewis, Director, College Station, Texas, March 7, 1957.

releasing the lady beetles in the cages. The beetles did not multiply in the cages, however, and more were added every three or four days until the end of the harvest.

Activity of Pollinating Insects

Small sugar-eating ants occurred on the vines and flowers seeking nectar. They appeared not to feed on pollen and seemed unlikely to pollinate the flowers.

Small numbers of ground-nesting solitary bees, **Halictidae,** appeared in the cages during the early part of the cucumber bloom. Since these small bees are common in many areas, no effort was made to remove them from the cages. Obviously some cucumber flowers of caged plants where honeybees were included were pollinated by these small bees. Because of their small size, they can obtain nectar readily from the flower of cucumbers without contacting either the stamens or pistils; consequently, they are less valuable than honeybees for pollinating large flowers. The **Halictid** bees were not observed on the flowers of cantaloupes which bloomed later.

A few solitary bees of medium size, **Melissodes communis,** were observed in the open field on flowers of cucumbers and cantaloupes. They appear to be efficient pollinators, but cannot be relied on for extensive pollination because of their generally limited occurrence.

Honeybees are the most dependable pollinators since they can be obtained and distributed in the number desired. They are especially well adapted for pollination because of their fidelity to the bloom of a plant species so long as it provides an adequate supply of nectar or pollen.

Cucumbers

The variety Straight Eight was planted. Cucumber plants have separate male and female flowers on the same vine; consequently, they require insects for pollination to produce a normal crop. The male flowers begin blooming at least 10 days before the female flowers and occur in greater numbers.

Colonies of honeybees were installed on June 2 with designated caged plants just before the first female flowers opened. Small solitary bees which appeared at this time obviously affected some pollination of plants in cages from which honeybees were excluded. Honeybees were the dominant visitors of open field blooms. The vines were thrifty and production was satisfactory.

The first cucumbers were gathered on June 11 and gathering continued daily until July 5. All misshapen and non-marketable cucumbers were culled and not recorded for production.

Table 1.

Yield of cucumbers, bushels per acre[1]

Block No.	Caged plots		Open plots
	Without honeybees	With honeybees	With honeybees
1	108	556	540
2	87	417	579
3	71	394	460
Average[2]	89	456	526

[1] 1 bushel = 48 pounds.

[2] Least significant difference, 5%=115.

Results

Cucumber plants in screen cages from which honeybees were excluded were pollinated to some extent by small ground-nesting solitary bees and the yield averaged 89 bushels per acre.

Cucumber plants in screen cages kept under the same condition except for the addition of honeybees for pollination, yielded an average of 456 bushels per acre, which is five times the yield obtained from plants without honeybees.

In the open field provided with honeybees, the yield averaged 526 bushels per acre, or about six times the yield obtained from plants without honeybees.

Cantaloupes

The seeds used were a selection of the Rocky Ford variety. The male flowers appeared about 10 days before the female flowers opened and outnumbered the latter at a ratio of about 10 to 1.

A large portion of the fruiting flowers also contained stamens. Self-pollination may occur in this condition. In cages not provided with honeybees, however, few flowers set fruit. Since lady beetles were used in the cages for aphid control, some pollination may have been done by the beetles contacting the flowers.

Procedure

Colonies of bees were installed with designated caged plants on June 9 several days before the fruiting flowers opened. No wild bees were observed on caged plants from which honeybees were excluded. Ten colonies of bees were located near the experimental field.

With few exceptions, honeybees were the exclusive visitors of the cantaloupe flowers in the open field. In visiting the flowers, honeybees come in contact with the stamen and pistils. The pollen adheres to the bees and is transmitted from one flower to another and effects pollination. The bees were removed from the cages during the last week in July when the vines ceased to develop melons of normal size.

Harvest began on July 16 and was completed on August 6. The melons were gathered daily at the full-slip stage. The vines were thrifty and the yield of melons satisfactory. The quality was good and the average weight per melon was 3.2 pounds. Only marketable quality melons were considered in the production.

Table 2.

Yield of cantaloupes, crates per acre[1]

Block No.	Caged plots Without honeybees	Caged plots With honeybees	Open plots With honeybees
1	45	407	492
2	20	292	264
3	49	279	236
Average[2]	38	326	331

[1] 1 crate = 83 pounds.
[2] Least significant difference, 5%=155.

Results

Plants in cages without bees set few melons and produced only .4 melon per plant with an average yield of 38 crates per acre.

When bees were provided in cages and the open field, the plants averaged 3.9 melons and the yields were 326 and 331 crates per acre, respectively.

The Summer Meeting of the Eastern Apiculture Society

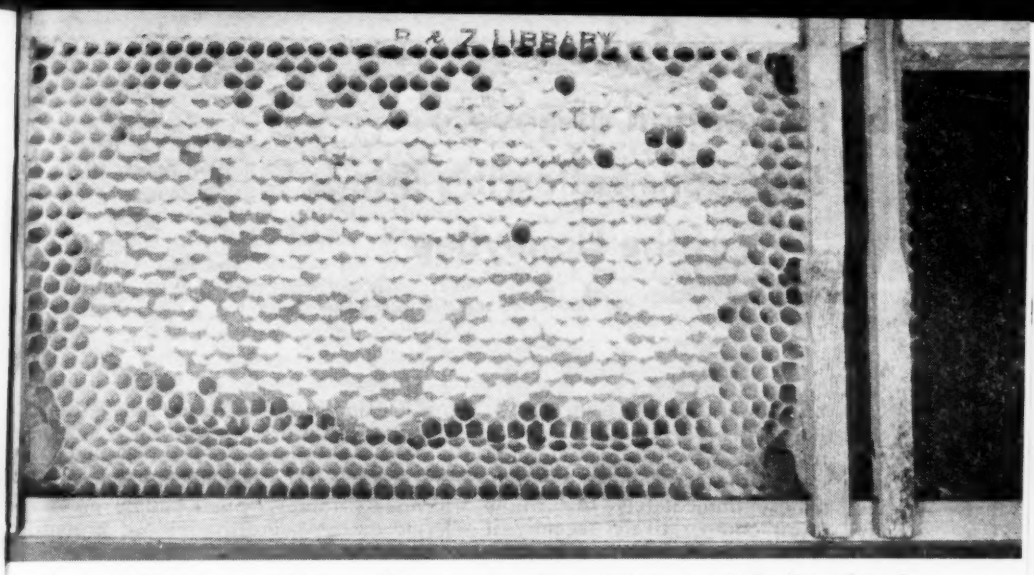
The **Eastern Apicultural Society** will hold its Third Annual Conference, August 23 and 24. The Conference will stress both the social and educational phases of beekeeping. On the social side will be a tea for the ladies on Friday P.M. followed by a dance in the evening. The whole plan of the conference is arranged to catch and hold the interest of the entire beekeeping family. Penn State's Famous Flower Gardens will prove an added attraction.

The Conference will feature top-flight speakers who will discuss important phases of beekeeping. Among the speakers will be Dr. Gordon F. Townsend of Ontario Agricultural College, Guelph, Ontario, Canada. Lloyd Shearman of Maryland, Dr. White of the Philadelphia Federal Testing Laboratory, James I. Hambleton of Beltsville, Maryland, Dr. Marvin Webster of U. S. Department of Agriculture. Dr. Borthwick of Beltsville who did such a marvelous job with behavior of plants will be with us again. Pennsylvania will contribute its talent with such quality speakers as Prof. Anderson, W. W. Clarke, and Mrs. Fern Hetrick. The entire program will be filled with social, educational, and recreational activities.

The Gadget Show, the Honey Show under the capable guidance of Prof. George Abrams of Maryland, and the delicious Chicken Barbecue on Saturday evening are certain to make the Conference highly attractive.

The costs while attending the Conference will be surprisingly moderate. Registration will be $2.00; dormitory space in Simmons Hall on the Campus will be $2.50 per person per day. Single rooms will be $3.00.

Send your Registration fee, $2.00, to E. J. Anderson, Room 9 Dairy Building, University Park, Pa. Everybody is welcome. And where can you get so much for so little? You just can't afford to stay home.



No. 1. A half frame of comb honey, which in its present form, simply is not salable. Honey from the empty half is already in a cut comb jar.

Selling Late Summer Comb Honey

as suggested by THOMAS DOONAN, Des Moines, Iowa

WHEN the inevitable hot, dry weather strikes, and your bees can no longer find nectar in any sizable quantity, you are quite likely to end the season with a number of unfinished combs of perfectly good honey. Then, what to do with them?

That is what happened to our bee pasture and honey crop last summer, when from July 10 to Sept. 19, we had only one rain, and it came late in August. It was a clear case of rainfall being too little and too late, serving only temporarily to cool off the parched fingers of drought.

With the honey season brought to an untimely close, we were faced with the choice of putting the unfinished combs through a capping melter, and separating the wax from the liquid honey, or else making it look presentable in the popular cut comb jars. As I see it, by preparing the best portions of comb honey in cut comb jars, we were not only doing ourselves a financial favor, but we were pro'onging the comb honey season for our customers who prefer honey in that form.

If you are fortunate enough to get a "vintage" year for honey production, then you may have nothing but fancy comb honey for everything, including the cut comb jar trade. If so, fine and dandy, but I believe such a season for honey is an exception rather than the rule, so what I have suggested above will apply to most **normal** years.

No. 2. The good portion of comb surrounded by strained honey in this cut comb jar becomes a desirable item, and will bring a good price. Many of our customers admire this package, and comment about how attractive it looks.

The Prevention of Severe Reactions Following Stings of the Honeybee

by FRANK W. SCHOFIELD, D.V.Sc.*

FOR MANY years it has been known that the sting of a bee may cause a severe reaction, which is not limited to the site of the sting alone but may affect almost immediately the whole body. Until comparatively recently it was believed that the severe symptoms were due to the venom being injected directly into a small blood vessel. It is now known that both the suddenness and the severity of the reaction are due to an unusual degree of sensitivity to bee protein, not venom, in the person stung. This brings us to the first point which we wish to emphasize, that the reaction following a sting, whether mild or severe, is due to bee protein, a nitrogenous substance present in all living tissue. Bee venom contains a small amount of bee protein. Venom from which all the protein has been removed causes only a slight local reaction at the place of injection. This is apparent from the many instances recorded of people suffering from asthma and other reactions by simply handling equipment or inhaling air containing dust from bee hives.

Allergy or Hypersensitiveness

Most of us have become familiar with the words "allergy" and "allergic". They imply a reaction which is unusually severe to an agent or substance, which is usually harmless. A good example of an allergic reaction is the condition called "Hay Fever". Here, the pollen of certain plants when inhaled may cause an inflammation of the nose and eyes with a watery discharge or an "allergic reaction". In the majority of people the same pollen has no harmful effect. Allergy, or hypersensitiveness, means an exaggerated response.

So it is with the sting of the bee. The majority of people experience only local pain with slight swelling. In a few individuals, however, the reaction is not only much more severe, but is general as well as local, and may even terminate fatally. Such people are allergic or hypersensitive to bee protein. There are, of course, varying degrees of hypersensitivity. In most cases the allergy has developed over a period of time. The reactions to the first few stings received were not unusual, but as time passed the reactions became increasingly severe.

The Symptoms of Bee Sting Allergy

The symptoms generally appear a few minutes after the sting, but may be delayed as long as 24 hours. The local swelling tends to be excessive. Urticaria, or a condition like hives, may break out over the body. There is a sensation of choking, difficult breathing, asthma, and the lips turn blue. Shock-like symptoms, vomiting, and loss of consciousness may follow in rapid sequence.

The most important thing is obviously prevention. Medicinal treatment, following the sting, even when given almost immediately, may be too late to save the life of the patient.

Many years ago, when carrying on experiments in the first case of bee-sting allergy which we had observed, we were surprised to discover that the patient was equally sensitive to extracts made from either the body of the bee or the body plus the venom. In other words, the venom had little or nothing to do with the allergic state. An extract made from the head of the bee was equally as effective as a test agent as one prepared from the tail!

The preventive treatment employed with so much success in allergic conditions is technically known as "desensitization". It consists in giving a care-

* Professor of Pathology (Retired), Ontario Veterinary College, Guelph, Ontario.

fully graduated series of injections of an extract made from the very same agent which causes "sets off", the acute allergic reaction. The cause of the disease becomes the cure of the disease. Following the technique employed in the preparation of extracts for the treatment of other allergies, we made extracts from the bodies of honeybees. A series of injections of this bee body extract were given with excellent results. Prior to these treatments the patient would suffer from a severe attack of asthma, accompanied by malaise, following the stings of two or three bees. After the treatments even large numbers of stings—50 in one day—had little or no effect. Since then other cases have been successfully treated.

Some Questions Which are Frequently Asked about the Treatment

Is the treatment successful in all cases? If by "success" is meant a complete freedom from the severe and dangerous allergic reaction, then the answer is an emphatic "No". Considering our own results and the experiences of many others, I think that it can be stated without question, that almost all people are benefited from the treatments, but some very much more than others. Certainly in the great majority of cases, if not in all, fatal allergic reaction would not follow bee stings, unless inflicted in large numbers. This is surely a highly gratifying result. Some people are unfortunately unable to tolerate the larger doses necessary to give complete protection.

How frequently should the treatments be repeated? Or, in other words, how long does the protection last? No certain answer can be given to this question. In some cases one complete treatment is all that is necessary. In others the treatments must be repeated, or better, suitable injections given every month. In those cases, where following the treatments, the individual is frquently exposed to bee stings, the immunity will most likely be maintained.

Does protection against the sting of the honeybee result in protection against the sting of the bumblebee, wasp, or hornet? In most cases yes, in some cases apparently not.

Important

1. When stung, be very careful in removing the stinger from the skin. Brush off rather than pull out. This should be done immediately, as the venom sac continues to contract forcing the contents into the tissues. When carelessly removed, pressure on the sac will cause more venom to enter the tissues.

2. People who suffer from allergic reaction should take the desensitizing treatment. Until that is done, some suitable drug, such as adrenaline, should always be at hand, and taken immediately.

3. Avoid stinging insects as much as possible.

4. When stung, remove stinger immediately, take adrenaline, then call a doctor without delay.

Note: Treatment for desensitizing may be obtained by your physician from Hollister-Stier Laboratories, 2031 N. Sixty-Third Street, P. O. Box 4520, Philadelphia 31, Penn., U.S.A.

National Honey Show to be Held at Florida State Fair

ROBERT BANKER, Secretary
Cannon Falls, Minn.

BY DECISION of the Executive Committee of the Federation the next National Honey Show will be held at the Florida State Fair in Tampa, Florida in early February 1958. Details as to entrance requirements, prizes and trophies will be announced in the News-Letter and trade journals as soon as they are available. It is expected that about the same classes will be open as previously with approximately the same amount of prize money awarded in each class.

The 1959 National Honey Show will also be held at the Florida State Fair in Tampa and as well the 1959 Federation Convention will be held in Tampa at the Hillsboro Hotel, the week immediately preceding the opening of the National Honey Show.

We will have more details on these events in later issues.

Crawford Uncapping Machine

by B. M. CRAWFORD, Santa Ana, Calif.

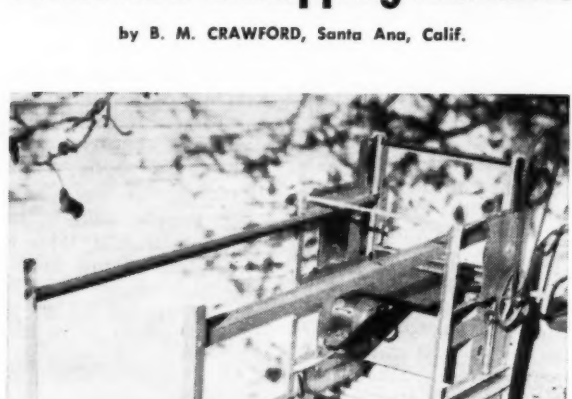


Fig. 1

FIG. 1 is my uncapping machine, heater, and clarifier built into one package. Fig. 2 and 3 are views of my capping melter in which Fig. 2 shows the front side having the door clipped open for raking out.

No. 1. The uncapping may be operated by unskilled labor at a speed of five combs per minute. The combs are placed in a saddle upon the carriage which is constantly moving (down and up).

The comb is held securely while it passes down between gently revolving flails which remove the cappings from both sides at the same time without injury to the frame. The upward movement of the carriage returns the comb between the flails which clean the comb and automatically sets it off the carriage to the 72-frame rack above.

The cappings and honey removed pass over a heater below and drop into a clarifying vat where the wax forms on top and the honey escapes at the bottom through a bypass which maintains a constant level (full) in the vat during operation.

At the end of the day's run the bypass valve is opened allowing all honey to escape but the wax is trapped by coming to rest upon a screen near the bottom where it drains during the night.

The wax is not melted but heated to about 110 degrees so that it retains only about one pound per 60 pounds extracted during the day's run. The honey so heated most conveniently lends itself to rapid clarifying. The wax likewise releases most of the honey held in saturation owing to the heat applied.

And thus we accomplish the uncap-

ping without skilled labor and have by-passed the necessity of spinning the cappings.

The capping melter or refiner shown in Fig. 2 is a front view with the oven door open for convenient raking out of slumgum. Fig. 3 shows the water supply opening with closing device.

The melter is designed with a built-in oven (surrounded by steam) for separating the wax and conserving all the honey in marketable shape.

The melter pays its own way all the way because it requires but little attention as it refines yesterday's cappings while the extracting crew are busy today. Thus, the storage problem is solved with the cappings reduced to a minimum and in marketable shape each day.

Nearly all bee men have come up with some contrivance for rendering cappings. They found it as simple as grabbing a wild-cat by the tail but how to get rid of the critter without being messed up was the problem.

From the standpoint of time I might take credit for persistence. In 1917 my first melter was placed on the market, one of which I still have. It had its little faults for it was small indeed and so'd for $11.00 complete.

The plugging of pipes, screens, or strainers have been my problem and also where to go with a hot basket full of dripping slumgum without messing up my blue suede shoes. Finally, I have come up with a melter having an inclined mounted screen that won't clog, having no slumgum baskets dripping over the place.

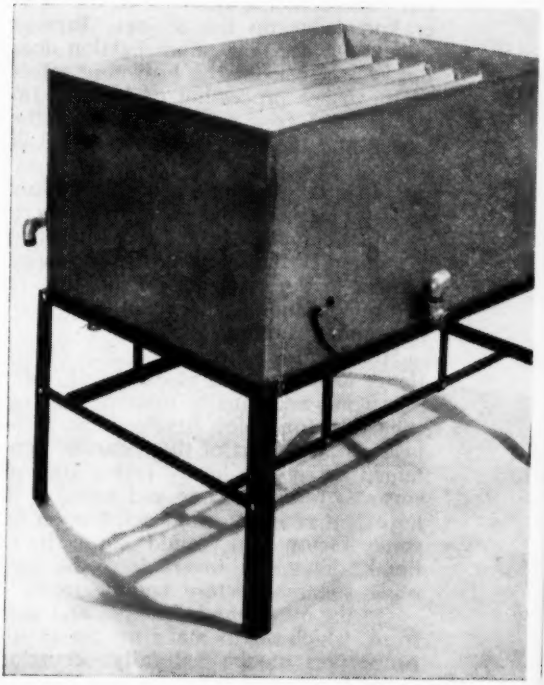
I simply lower the liquid level in the separating chamber. After two hours' operation, the slumgum is suspended upon the screen above liquid level and may be raked out into cardboard boxes for convenient disposition. It's as simple as that with honey flowing from one spiggot and pure wax from the other.

The cappings are piled into the hopper and supported by the triangular tubes until partly melted by steam within. The wax and honey pass between the tubes into the separating chamber and become completely liquid. Within the chamber the wax and honey separate according to specific gravity and

(Continued on page 445)

Fig. 2

Fig. 3



HONEY: Color Deterioration

Influence of Processing and Other Factors

by ALFRED E. LEIGHTON, Consulting Food Chemist and Technologist, Riverdale, New York City, N.Y.

THE DEVELOPMENT OF color (darkening) when processing honey, does not enhance its sales appeal. Therefore, any information that can be brought to bear on the subject which can minimize that effect, can mean extra dollars and cents in the pockets of processors.

The matter has been the subject of study within recent years by workers researching in that particular field. It was formerly thought that the darkening or browning of honey which occurs in processing was due to the caramelization of the sugars found in the materials—with the role of the fructose content being particularly suspected. However, the opinion seems to be without justification in the light of the newer knowledge on the subject. Present indications are that caramelization does not play a role in the browning effect in the usual processing of honey. Instead, there is a reaction between the sugars and the protein matter found in honey. The speed of color deterioration that takes place during processing and storage is related to, (1) the severity of the methods of processing and storage, (2) the nature of the sugars present in the material, (3) the amount of protein, and (4) the quantity of mineral matter present.

High temperature processing causes flavor losses, as well as darkening. Not all sugars are equally reactive and responsible for color development. For instance, that part of the naturally contained sucrose in honey (same kind of sugar as found in cane and beets) is to an extent resistant, until acted upon by some factor that would cause it to break down, or invert into the two other sugars: fructose and dextrose.

On the other hand, fructose and dextrose, which go to make up the major proportion of the naturally occurring sugars in honey, do form dark colors when heated in presence of protein material. The bee, of course, is responsible for the protein (in the form of pollen) present in honey. Fructose is, as a rule, the more active sugar of the two in its responsibility for browning. This, however, is not true in every instance, since a sample of tupelo honey, a type which is known to contain considerable more — sometimes just about twice as much — fructose as it does dextrose, was not any the worse an actor than other honeys. These normally carry a ratio of about 40 per cent fructose sugar to 34 per cent dextrose. It would appear then that there is still an undiscovered factor which is a self limiting one in the darkening of honey.

The extent of the protein contents of honey may run as high as 0.3 per cent, although it has been known to reach 2.6 per cent. Breakdown of the contained pollen into existing amino acids may take place. As amino acids, the substances formed, are specially susceptible to the reaction with sugars and the resulting development of darkening bodies. When the pollen as such was removed before breakdown and isolated by suitable filtration methods, the pollen was not found to be a factor of much importance in the formation of color. As was to be expected, the removal of the pollen contents from the honey by filtration also removed most of the flavor and aroma.

It is perfectly safe to pasteurize honey at a temperature of 140 degrees F., for one-half hour without any color deterioration. If the heated material is then quickly cooled and kept in a cold room, no darkening will occur during the maintenance of such conditions. It has been found that honey can be kept for at least three months at a tempera-

ture of 50 degrees F., without bringing about any noticeable deterioration of flavor or color.

The presence of copper in edible oils and fats, as well as in some other foods, is known to accelerate their deterioration. The question therefore arises as to whether the known presence of traces of copper, such as are found naturally in honey, are also responsible for hastening the darkening process. Furthermore, does the use of copper vessels in processing cause discoloration due to traces of the metal being dissolved off from such vessel surfaces. The naturally occurring copper in honey may run from 0.14 parts per million to 0.7 parts, for a light floral honey and from 0.35 to 1.04 parts per million for a dark floral honey. It is also known that the darker honeys are usually associated with high mineral content, although this may not necessarily be the cause of the darker color.

In order to check the effect of adventitious copper in color development, two workers (E. Einset and W. L. Clark, formerly connected with the Department of Nutrition of Cornell University) ran a series of experiments. Samples of dark buckwheat and light clover honeys, obtained from fresh New York State combs, were filtered thoroughly and studied. The object was to measure the effect which contact with copper throughout processing had upon the color and how much of the metal passed into the honey as a result of the treatment. The light and the dark honeys were handled in an identical manner in contact with copper. The temperature of treatment was prescribed and maintained constant. Thereafter, the samples were held in storage at 122 degrees F. Comparative checks of color were made at all stages with sensitive instruments, at suitable intervals, over a period of time. Other samples of the same honeys, not treated in any way, or allowed to contact copper, were held at room temperatures to act as reference standards.

As a result of the foregoing it was found, that depending upon the duration of the exposure, a dark honey could pick up 0.43 to 0.73 parts per million of copper, in an exposure of five hours' duration at a temperature of 140 degrees F., while a light honey under the same conditions picked up more, sometimes twice as much metal, as the dark samples. However, this effect was not regular and tended to vary with the samples; some would pick up less copper than others in their respective types.

Measurements of color development did not indicate any noticeable effect of the additional copper contamination, even when the samples were held under storage conditions at the temperature named before.

Summarizing

The studies reveal that neither the copper naturally present in honey, nor the processing of honey in contact with copper, caused color deterioration of the product. Fears to the contrary are without foundation, as borne out by the experimental work performed and outlined herein. It therefore follows that it is perfectly safe to process honey in copper vessels at temperatures up to 140 degrees F., for one-half hour, then cool it down quickly to 50 degrees F. and store it at that temperature, without color deterioration.

"Flies" on a Charcoal Grill

by T. H. HAHN, Topeka, Kansas

IN A SUBURB of our town where there are acres and acres of new houses, very few fences and no trees, a newly-wed couple left their charcoal grill where they were using it, about 20 feet from their back door. This was the only thing that a swarm of bees could find to light on one afternoon. When the man of the house, groom, arrived home that evening, the young bride immediately escorted him to the back door and exclaimed: "Just look at those flies on our grill, isn't it sickening?" This is an actual story, I have the bees.

Protect Your Future. Buy Your Savings Bonds Now.

Beekeeping in Colorado

by JOHN W. HOLZBERLEIN, Meeker, Colo.

COLORADO IS the "high" state. Over 75 per cent of all the land in the U. S. that is 10,000 feet in elevation or higher lies within the state of Colorado with over 40 peaks that tower above 14,000 feet. All this makes for the grandeur of alpine scenery, cool nights all summer, and pure air untainted by the fumes of factories or the smoke of great cities, but it keeps farming and its "side kick", beekeeping, from becoming very widespread. Livestock raising is state-wide in importance and grazing accounts for the use of most of Colorado's untilled acres. The central part of the state is mostly mountainous, and with rare exceptions unsuited for beekeeping. Most of the plains area in the eastern part is too arid. Much of the western part is rough and brush-covered, with some desert, also largely unsuited for cultivated crops and beekeeping.

Only the irrigated sections below 7500 feet in elevation are suitable for successful honey production. This is shown as the primary area on the map. It is in this relatively small area that nearly all of Colorado's approximately 5,000,000 pounds of honey is annually produced. As these figures would indicate, yields are fairly consistent, and while large crops are not common, neither are failures, with the state average often close to 60 pounds per colony. The very fact that irrigation is practiced aids honey production. Water can be given to the soil without the loss of bee hours that goes along with rainfall.

Summer days are warm and bright, as a rule, with bees working nearly every day during the honey flow. There is slightly more irrigated area than shown on the map but most of it is too high for honey production. At higher elevations summer nights get too cool for honey production and winter conditions are often too severe for colony survival.

There is little marginal beekeeping territory in the state. Most of the irrigated section is either good or too high. The rest is too dry. There are, however, numerous wild flowers on the land adjoining irrigated acres that offer spring sources of pollen and nectar that aid in colony build-up.

The most important honey plant is alfalfa, closely seconded by the sweet clovers, both yellow and white. The alfalfa is largely grown for hay and often cut before the bees benefit a great deal from it, but enough has spread to ditch banks, fence rows, and road sides to afford a connecting flow between the peaks that come when the hay is in bloom. The sweet clover is mostly volunteer, growing on waste land along creeks and ditches. An important source of nectar is often provided by alfalfa fields which have become too dry to produce growth sufficient for the cutting of hay. This usually occurs with the second or third cutting, in which case the stand is left for seed or for pasture. It often provides an abundant bloom though the plants may be little more than six inches tall. Honey from the above sources are generally high in quality, typical of the Intermountain West, ranging from white to water-white in color, and with very low moisture content.

The standby of the spring build-up period is the dandelion. Irrigated meadows and pastures are often solid yellow with its blossoms in late April and throughout May. While the flavor is strong and generally considered unfit

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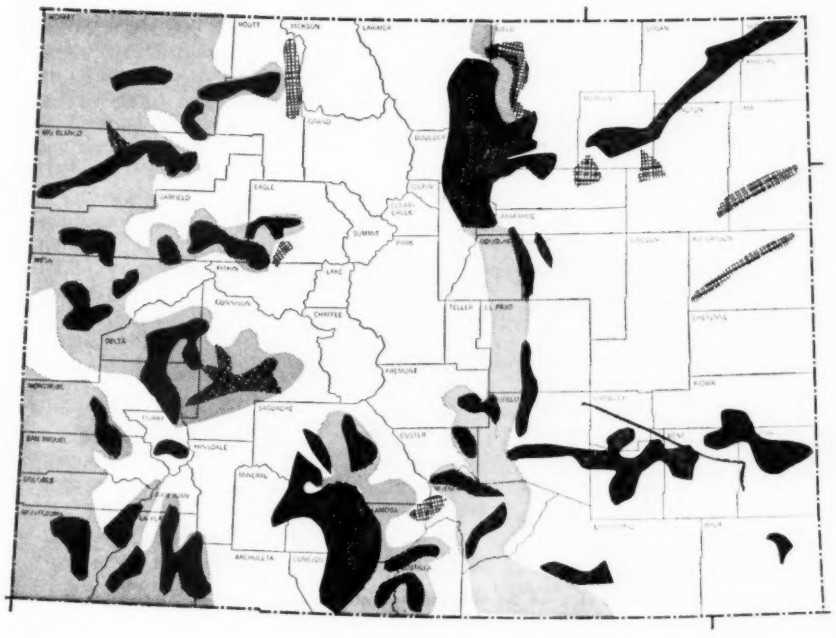


Primary Areas—Black Arid Plains—Eastern—White Part

Secondary Areas—Black and White Checked Rough Brush and Desert—Shaded

Country too high for beekeeping—Western—White Part

for table use it is nevertheless an important factor in the beekeeping picture. In some of the high mountain valleys a surplus might be gained from it if from nothing else.

As seen by the map, honey-producing sections are pretty well localized in the valleys of streams. This has the tendency to make them long and narrow. Usually there is one commercial producer in each area with less overlapping of territory than in sections where farming is more widespread. While the northeastern area is the larger, the San Luis Valley which covers parts of Saguache, Rio Grande, Alamosa, and Conejos has long been known as the most important honey producing section of the state. There have been years in the past when that area has produced as much honey as all the rest of the state combined. But recent drought years and overstocking have changed that, though the San Luis Valley is still tops.

The area west of the Continental Divide has many good beekeeping spots. But they are so small and scattered as to discourage large operations. No large irrigation projects here, only the valleys of creeks and small river valleys under cultivation. These areas are usually each occupied by one commercial producer running from 500 to 1000 colonies. Few exceed that number for the distances between yards becomes too great. It is on the "Western Slope" that one finds beekeepers who like to hunt and fish.

The Arkansas Valley in the southeast section supports several good commercial producers. For a number of years conditions were below average here, but new methods of controlling alfalfa pests have again brought this area to the fore in honey production.

While Colorado has never ranked among the first ten states in honey production the high quality of its honey and the consistently good per colony average have kept beekeeping on the list of agricultural pursuits.

XUM

The Care of Comb Honey

by S. JOAQUIN WATKINS, Grand Junction, Colo.

A view of the scraping and grading room.

DURING THE winter months comb honey supers, section holders, and fences are carefully scraped in order to remove any wax or propolis. This is important to insure proper fitting of the various parts.

The foundation is fastened in the section (eight-frame supers and the 4¼ x 4¼ x 1⅞ beeway section are used) with the aid of a Rauchfuss foundation fastener. This device shapes the section and fastens in the foundation with only one handling of the section. The operation requires considerable practice on the part of the operator in order to develop skill and speed. The finished sections are placed in the super and when the super is filled, it is ready to be sprung and paraffined. The paraffin is supplied by a small paint brush, care being taken to keep the paraffin at an even temperature.

If there is any doubt as to the proficiency of the person doing the foundation fastening, the supers should be checked carefully for "fall-downs" before being placed on the bees. The roads in this area are very rough, so this can be a problem to us.

The mechanics of supering the bees, etc., was taken up in the March article, so we can proceed to the loading of the filled supers on the truck. The supers are stacked on a pallet, the stacks being covered first with a cardboard cover over which is inverted another pallet which allows an air space between the cardboard and the pallet. This prevents the direct rays of the sun from striking the tops of the supers.

Although we are careful to remove practically all the bees from the supers at the bee yard, upon unloading, the supers are stacked on pallets and each pair is staggered to allow any stray bees to escape and to aid ventilation. They are then trucked to a holding room that has a bee- escape in the window. As a rule, no difficulty is encountered in driving the bees from the supers, but some strains of bees are very difficult to drive out of a comb-honey super, particularly in very hot weather. When such a colony is found, the super is removed from the hive and placed on an inverted lid or pallet in order to allow an air space below (the acid pad is kept in place, of course).

This device usually frees the super of bees with very little fuss.

After the supers of honey have been allowed to stand over night, the paraffin is scraped from the tops of the sections by means of a plane bit. This is accomplished by placing the end of the super on prepared rests inside a 10-frame super (this super also has a bottom in order to catch the waste paraffin). The paraffin is scraped off by a downward motion of the plane bit, the bit being grasped by the fingers of each hand. After a little practice this operation becomes quite speedy and efficient. The supers are then trucked to the sorter.

The springs are removed and the sections are then loosened by giving the super a sharp jar on a metal plate. Extreme care must be taken in this work because too hard a jar or careless use of the hive tool in separating the fences will cause damaged and unsalable sections (I might mention here that all damaged sections are cut out and packed in wide-mouth jars and sold to the local people by the pound). This not only takes care of the damaged sections — no honey is poured over them — but it makes many friends among the local people. The unfinished sections are then removed (oh yes, we have them) and placed in separate supers to be taken back to the bees in order to be finished. With proper care, this works very well and we are thus able to salvage many sections. The finished supers are stacked ten high which seems to be about as high as the women scrapers should lift.

Scraping the sections is very tedious and requires practice and strength in the fingers as well. The section is grasped in one hand and rotated while cleaned of excess wax, etc., with the aid of a specially designed knife. This operation has to be very carefully done or many damaged sections (weepers) will result. After the sections have been scraped they are stacked on a large masonite table, care being taken to keep the sections from the same super together. This facilitates the grading in that sections from the same super tend to be uniform in appearance, etc. Leaky and damaged sections are placed on special racks for further care.

Grading is meticulous work and requires training and experience. In our case, it is further complicated by the fact that in many cases the supers do not reach the grading table as a unit, but are composed of sections taken from more than one hive. Each section is graded, weighed, and then placed in a box (we use the old type wooden shipping case). The sections are further matched as to type of cap, uniformity, coloring, etc., so that each case when packed will contain uniform sections in every respect as far as possible.

Operating the Rouchfuss foundation fastener.

After the cases are filled they are stacked on pallets and then trucked to the wrappers where they are cellophane-wrapped in an attractive, colorful wrapper. We feel that although some sections are damaged on the store shelves, the use of 450 weight, moisture-proof cellophane tends to mitigate any serious trouble that may arise from normal handling. An attractive cellophane wrap certainly "does something" to the appetite appeal of the honey.

In closing, I would like to comment on strains of bees in relation to comb-honey production. Extreme care should be used in the selection of the stock because not only will some strains of bees refuse to produce comb honey, but type and uniformity of capping, fill of section, and degree of attachment area are all important factors that vary greatly among bees of different races and strains. If any one has a good "comb-honey" bee, please let me know.

Thoughts and Facts about

"Royal Jelly"

by MARGARITA KELLENBERG DE ELG,
Villa Berna, Prov. Cordoba, Argentina

FOR THE last couple of years royal jelly has been commented on and discussed—not only by beekeepers, but by scientists, biologists, medical doctors, and last but not least by the great mass of sick people throughout the world unable to reestablish their broken health by the use of modern medicine, antibiotics, etc.

For years I have been reading GLEANINGS, American Bee Journal and a most varied number of specialized publications in different languages and have been surprised to notice that in the two leading bee publications so very little is said about royal jelly. Excepting a few short comments about the royal jelly treatment of his Holiness Pius XII and a report from Greek beekeepers, etc., nothing of interest has appeared.

It seems to me that the moment has arrived to round up the serious and capable royal jelly-minded beekeepers and teach them more about this "marvel food" of their bees and get them interested in a more rational and correct production. Maybe, that some day—talking of bees—the first thought will not be honey but royal jelly!

Intensive and serious scientific investigations have taken place only since 1952 (approximately) and very little practical experience is available yet on the therapeutical use of royal jelly for human beings. Nevertheless, we have today quite an amount of interesting facts speaking for themselves, and researches in this field are being made by institutes, hospitals and medical doctors throughout the world, as for instance: Pasteur Institute in Paris and Tunis, Institute de Alimentation Rationelle de Paris, Institute de Gerontologis, Paris, and Cancer Institute, Florida, U.S.A., etc. All this work is done quietly and seriously and one day—not far ahead, we will have the results published.

In the meantime, quite a lot of loud propaganda has been made by commercial firms, producing and selling royal jelly in all possible ways and forms, even in tooth paste, hair lotions, beauty creams, etc. This, I think, has done a lot of harm to the cause of this noble and valuable product of our bees. I know of more than one scientist, especially in France, complaining that he cannot obtain the necessary quantities of this rare and valuable bee-milk to proceed with investigation on a larger scale. This, I'm sure, is the main reason why more facts and scientific results on royal jelly are not available.

So far, Argentina has few producers of royal jelly for therapeutical use—to my knowledge not more than three—and they cannot produce more than a very small portion of the steadily increasing demand. Some doctors, reluctant in the beginning, now seem to have accumulated enough proofs of the cell-reconstruction factors of royal jelly and are increasingly using it against a most varied number of diseases, in fresh or injectable form. The results are various—some good, some absolutely amazing, and a few cases without reactions. Splendid results have been obtained in cases of circulatory troubles, glandular deficiencies, nervous diseases, various kinds of anemia in grown-ups and children, menopausical troubles, genrontology, etc. It has been wonderful to see undernourished children react on a 30-day treatment with

royal jelly, and experiences obtained by Dr. Prosperi, Children's Hospital University, Firenze, Italy, were lately applied in this country, with most excellent results.

Lately, quite a polemic takes place, especially amongst medical doctors, about the use of royal jelly therapeutically and there are a good many reasons for this. There is royal jelly and royal jelly, the analysis of the genuine one varies considerably according to the class of flowers, pollen, climate, and season the bees enjoy. But all royal jelly is able to produce a queen bee from a larva, that normally, on her original diet of pollen and nectar would produce a worker bee. This metamorphosis is unique in nature and this super food capable of such miracle, should it not be of greatest value to human beings for therapeutical uses?

Therefore, in my opinion, if poor results are being obtained in various treatments with royal jelly, it is because of inadequate extraction and conservation methods used by the beekeepers. These two points are of greatest importance, as royal jelly is a most delicate biological product and may lose a great deal of its active powers only a few hours after being extracted. Only most conscientious and capable apiculturists ought to undertake this task of considerable responsibility — the more because royal jelly is still a most expensive and rare product. The consumer, therefore, has the right to expect delivery of genuine and efficient quality.

Large scale investigations regarding dosifications with royal jelly have taken place lately. Personally I agree completely with my colleagues in Greece, recommending bigger doses than customary in Europe and U.S.A. Here we give three grams per treatment, when given fresh, in daily doses of 50 to 100 mgr. For treatments with injectable royal jelly the daily doses are very small and vary considerably according to diseases treated and constitution of the patient. Lately we have had to attend some most serious cases of arteriosclerosis, anemias, and glandular troubles, and complete cure was obtained with one to three treatments (30 days each) with injectable royal jelly. If used fresh from the hive, we give in serious cases (including cancer) shock treatments up to one whole queen cell daily, if heart and constitution of the patient can stand it. Of course, all these treatments must be made under medical supervision. To beekeepers I recommend the regular use of royal jelly for themselves and their family, but not more than 50 to 100 mgr. daily (a queen-cell has from 150 to 400 mgr.) taken half an hour before breakfast, mixed with honey or milk. The result will surprise them—their look on life different, vitality increases, mental and physical capacity improves, and a general well-being sensation will show.

"That neighbor always was a slave driver!"

Refreshing

Says MRS. BENJ. NIELSEN
Aurora, Nebraska

Serve crisp honey bran wafers with those tall frosty honey-way thirst quenchers. — Photo courtesy Kellogg Company.

WHO'S FOR a tall, frosty thirst-quencher? Cooling, refreshing — and if it provides a bit of energy for these hot enervating summer days, that is so much the better. Honey, that quick-energy flavor-food to the fore! Of course, there are those who insist on a hot drink winter or summer. So let it be sweetened with honey!

There is no better thirst-quencher and energy-giver than honey sweetened, subtly flavored, icy-cold lemonade. If you are in a hurry, or lazy (and who isn't, at least once in a while?) open a can or two of frozen concentrate, juice a lemon or two and add rind and all with sufficient water to make of required strength. Sweeten to taste with honey dissolved in a little hot water for ease in blending with the frozen juice. A brief waiting period and the rind produces a grand flavor!

If you like something to nibble on or serve with your honey-way liquid coolers, keep a supply of chilled honey bran wafer dough in the refrigerator and bake a few cookies in the cool of the morning; or cut and bake a big batch and freeze a portion. Give the birdies raisin eyes to delight small fry. A bit of delicately-colored green frosting will make cool-looking, realistic-looking leaves, if you are ambitious and party minded.

Honey Fruit Punch

Two cups boiling water, 4 tea bags, 2 packages cherry-flavored gelatin, 2 cups hot water, ⅓ cup honey, 1 46-ounce can grapefruit juice, 1 can frozen lemonade, 1 can orange juice, 1 large bottle gingerale, and 2 egg whites.

Pour boiling water over tea bags; brew 4 minutes and remove tea bags. Cool. Dissolve 1½ packages of gelatin in hot water. Add honey and stir until blended; add tea and stir to blend. Chill. Add fruit juices and mix well. Refrigerate until serving time. Just before serving beat egg whites until stiff. Gradually fold in remaining gelatin. Add gingerale to punch and ice. Drop egg white mixture on top of punch as garnish.

One-Two-Three Honey Punch

Six cups orange juice, 1 cup lemon juice, ⅓ cup raspberry or maraschino cherry juice, ⅓ cup honey, and 4 cups water or gingerale.

Combine ingredients and add ice cubes or large block of ice. Garnish with citrus fruits, if desired. Two quarts of lemon or orange sherbet added just before serving is a delightful taste treat.

Honey Bran Wafers

Two cups sifted flour, 1 teaspoon baking soda, ½ teaspoon cinnamon, ¼ teaspoon ground cloves, ¼ teaspoon allspice, ½ cup ready-to-eat bran, ½ cup butter, and ½ cup honey.

Sift together flour, soda, and spices. Crush bran slightly. Blend butter and honey. Add sifted dry ingredients and bran, mixing thoroughly. Chill. Roll chilled dough out on lightly-floured board to about 1/16-inch in thickness. Cut in fancy shapes with floured cooky cutters or with cardboard patterns. Place on greased baking sheets. Bake in moderate oven 350 degrees F. about 10 minutes. Yield: 5 dozen.

WANTON DESTRUCTION

described by ALLEN D. BROOKS, Charlestown, Ind.

A TELEPHONE CALL while I'm on my job is not a rare thing, but certainly the one I received some weeks ago was unusual and as it turned out, heartbreaking.

A few years ago I acquired three or four hives of bees as a hobby, and for pollination purposes for my small orchard and farm. As the hives multiplied my interest increased. Soon I was an enthusiastic beekeeper. My hobby became more than a fascinating pastime. Seeking a thorough knowledge of the colony and how it operates, I sought all available literature and began an avid study of bees. I added to my original hives. Shortly I needed additional space for my bees.

A few acquaintances were talked into permitting bees to be placed on their farms for pollination—thus, the phone call.

Ellis Ray Baird, New Washington, Indiana, was one of the first farmers to take advantage of my offer. He had a beautiful stand of clover. Locally, clover honey is tops in the selling line. I set several strong hives of bees on Mr. Baird's farm and let them build up. Early this spring, upon checking these hives, I found they were the strongest of the approximately 70 hives I owned. Each stand still had last season's honey and strong brood chambers filled with early stages of brood.

Mr. Baird's phone call informed me that the bees had been tampered with and damaged rather extensively. My son and I made a trip to the Baird farm to determine the extent of damage. It is beyond the realm of belief, without seeing, that overnight the colonies could suffer such a destructive blow.

The supers were scattered for a distance of 200 or more feet. The honey had been cut from the frames with a rusted plow point which was thrown aside. The saddest experience though, was seeing the brood chambers filled to near capacity with young bees, cast from the hives and left to chill in the cold March air. The vandals apparently became rushed, as they took along a number of complete supers loaded with honey.

Sufficient evidence has not been found to accuse any particular culprit. In the event they are found and prosecuted, nothing can restore the loss of the young bees nor the labor involved in getting them to top strength for an adequate 1957 pollination job and a top honey crop.

The way my yard looked that morning.

Editorials

National Farm Safety Week

FROM A FOLDER just received we note that the National Farm Safety Week occurs July 21 to 27 and is sponsored by the U. S. Department of Agriculture.

Since beekeeping is a branch of agriculture, it seems appropriate that we call attention to some of the data appearing in the folder. It is obvious that the majority of accidents could be prevented if only people could be made to understand the causes of accidents and practice safe living throughout the year.

It is noted that machinery accounts for 31.1% of the fatal farm accidents. Since most beekeepers, especially the commercial class, find it necessary to operate some machinery, especially honey extractors and automobile trucks, it is extremely essential that the utmost care be taken to operate the machinery intelligently. When working around the honey extractor while it is in motion, be sure to keep wide awake, also avoid having honey on the extracting house floor that might cause one to slip and fall against the extractor. It is horrible to even think of what might happen if one's hand or arm came in contact with the reel of a honey extractor revolving at 275 r.p.m. It would seem that such extractors should be properly covered while in motion.

Since automobile trucks used for out-apiary work are exposed to the hazards of present day traffic, it goes without saying that reliable drivers for such trucks should be secured. Also, it seems essential that each truck carry a fire extinguisher and a first aid kit and that someone in the crew of men knows how to administer first aid in the event an accident should occur.

Then there is the matter of knowing how and where to use cyanogas for bee-moth control. This chemical is very deadly and should not be used inside of buildings. The same applies to carbon bisulphide used for moth control.

We quote the following from the National Safety Week folder, "Great reduction of all accidents to farm and rural people is urgent. Safety makes sense on the farm, in the home and on the highway."

Old vs. New Brood Combs

DURING THE YEARS there has been considerable speculation as to whether or not brood combs used continuously in brood chambers for a number of years result in cells that are smaller than cells in new brood combs, also, whether smaller cells would result in smaller worker bees.

An interesting article on this subject entitled "Swarm Control and More Honey by Changing Old Combs for Foundation", by Arturo Wulfrath, Miel Carlota, Cuernavaca, Mexico, appears on page 424 of this issue.

In our footnote to that article, we rather assume that bees remove some of the cocoons from brood combs periodically to maintain the correct size or diameter of the cells. We also state that some colonies in the Root apiaries have combs that have been in use for over 25 years and the bees emerging from these combs appear to be normal in size although we have not measured or weighed the bees.

In casting about for articles that have appeared recently on this subject, we find that Anna D. Betts, former editor of "The Bee World", has the following in the March, 1944 issue of "The Bee World", pages 18 and 19 under the title "Old Combs".

> "Tuenin (A.B.J., January, 1927) found that the weight of emerging bees decreased as the combs grew darker. Michailoff continued these investigations and found that when the cells had decreased in diameter by six percent the bees emerging from them were smaller than those from the new comb. He found that the decrease in the depth of the cells did not influence the size of the bees. He considered that the size was determined by the amount of food the larvae received. Basing his argument on this work, Rupp (B.W. 11, 19)

stated that a comb, at this rate, would be too old and would produce smaller bees after 16 to 18 brood-cycles; that is, in about three years.

"Dr. K. Brunnich, like Mr. Wedmore, found that 18 cocoons make the base of the cell 1 mm thicker, but the walls only 1/500th mm. R. Whyte, on the other hand, had combs bred in for ten years; he stated that the bees remove the cocoons on the side walls, but not the accumulation on the base.

"From the above and some other observations, it appears to be conceded that the bottom of a cell often bred in fills up gradually. H. Clesse (B.W. 13, 127) pointed out that because the excreta, cast skins, etc. accumulate there between the successive cocoons, the cell bottoms thicken much faster than the walls so as to maintain the original cell depth. The 'seams' thereby become narrower, and the bees and the queen are hindered in their work, also the ventilation of the nest suffers. We do not know whether anyone else has remarked this; but it seems to be a very probable result."

The word "seams" in the foregoing extract apparently refers to the space between combs.

There is also a discussion of this subject by H. C. Dadant on pages 164 and 165 of the 1949 edition of "The Hive and the Honey Bee" as follows:

"The reduction of the size of the brood cell by the accumulation of the cast-off pupa skins, cocoons, excrement and varnishing resulting from each generation has been discussed by Quinby (30), Dadant (10) and others. All maintained that the lengthening of the side walls of the brood cell compensated for the slight thickening of the side walls and that the volume of the cell, if reduced, did not materially affect the size of the emerging bee."

Space does not permit a further discussion at this time, but there appear to be differences of opinion on this matter.

While in some of our colonies in the Root apiaries we have used good worker brood combs for quite a number of years, apparently with good results, we are of the opinion that it does not pay to use brood combs indefinitely, but rather, that they should be exchanged for new combs periodically, perhaps every few years.

Is Honey Non-Fattening?

MOST PEOPLE, especially the ladies, are concerned about their figures and wish to appear as lithe and wasp-like as possible. Little wonder Slenderella is doing a thriving business.

Just recently, after giving a talk on bees and honey to a group of high school students, one young lady somewhat on the plump side, but not out of proportion, approached us rather timidly after the meeting and inquired if honey was fattening.

In a recent member's bulletin put out each month by Harriett M. Grace of the American Honey Institute, Madison, Wisconsin, we quote the following:

"So many letters come to the Institute asking whether honey is a non-fattening food that we quote from the 1957 Decision of the Council on Food and Nutrition of the American Medical Association:

'In general, ordinary foods except water and common salt are sources of energy. Statements of calories per unit weight are useful in indicating relative economy of different foods as sources of energy. For healthy persons, calories from one food are not to be regarded as of more value than those from another food. Claims implying or stating that foods are non-fattening are misleading. All foods that yield energy may be considered to be potential precursors of fat, hence to call them non-fattening is a distortion of the fact.' "

It may be said, however, that honey seems to be more satisfying than some other sweets, as for example different kinds of candy. This being the case, we would not eat as much honey as we would candy.

While we beekeepers would like to believe that honey is less fattening than some other sweets, we do know that "honey is a superb product which is good to look at, good to eat, good to smell, good to other foods, and also good to the bees that make it. What more can we ask?"

FROM Foreign LANDS

Translated and Edited by ERIKA BARTH

Vacuuming Bees

THE IDEA of sucking up a swarm with a vacuum cleaner must have come at one time or another to every beekeeper, so it isn't surprising that a French beekeeper finally tried it.

The vacuum system worked quite well for the Frenchman, however, the bees didn't seem to do too well under the treatment. This poor treatment bothered the beekeeper so that he experimented with many variations until he perfected an apparatus to draw up the bees. He has patented it under the name of "Apiscupe".

The original vacuum cleaner was changed to take a plastic hose instead of a metal one and is long enough to reach a swarm located up to seven to eight meters high. The suction-piece, when in use, is moved from bottom to top over the swarm. The swarm is caught in a container manufactured of plexiglass.

M. Gurdi, French inventor, has used this apparatus to catch many swarms and also some that would normally prove extremely hard to catch. He has received awards at several exhibits and is now trying to interest a manufacturer in his patent.

Maandschr. voor Bijenteelt. Feb. 1957.

Death's Head Moth Attacks Bees

DR. H. M. FRASER published an interesting, although too brief a report, of how Death's Head Moths were observed attacking a hive of bees. Swarms of these moths are known to cross the North Sea and sometimes reach England. Sometimes they raise brood but the brood seldom survives the winter.

British Bee Journal. April 27, 1957.

Electrically Heated Counter Honey Tank

WE SELDOM review advertisements unless something unusual turns up, and such was the case when Pender Bros. Ltd., of Australia advertised an electrically heated honey tank for keeping honey warm for serving in restaurants, apparently. The counter tank holds 100 pounds of honey. Readers can secure a free descriptive brochure by writing to Pender Bros. Pty. Ltd., Elgin Street, Maitland, N.S.W., Australia.

The Australasian Beekeeper. April 1957.

How Does Your Bee Club Compare?

THE MOLE APIARY CLUB of England bought its own apiary site in 1946 and a few years later erected a permanent, brick-built club and lecture room, and had also laid a parking area for cars. This club house is fully equipped with regard to electric light, power, and water. The club also owns a power mower, a hedge cutter, and a movie screen. The members are presently saving funds for buying their own movie projector. This club has never received any outside financial support. Our hats are off to the **Mole Apiary Club** of England . . . truly an outstanding bee club.

British Bee Journal. April 27, 1957.

New British Bee Film

"WITHIN THE HIVE" is a new British bee fim produced by Norman J. Atkinson, lecturer at the University of London. It would be nice to have an exchange of honeybee films between Britain and America. Folks interested in U. S. beekeeping films can secure a free list by writing to the Editor of Gleanings.

British Bee Journal. April 27, 1957.

XUM

Live and Learn

by Propolis Pete

ONE OF THE exasperating things about being an old (experienced, that is) beekeeper is that you are supposed to know everything about bees. And then after you explain something carefully, having them turn around and do the opposite.

Take the matter of swarming for instance. The first rule is to prevent over-crowding. So, one of my beekeeping friends copied me and put everything he had on a hive so that they wouldn't get claustrophobia. And what happened? They swarmed. Natch.

Visitors to my bee yard marvel at the many supers they see on some of the hives. But they are not all full of honey, believe me. They are put on for several reasons. The first, of course, is that I want to give the bees all the room they need, and maybe a little bit more to take care of that unexpected surplus that sometimes comes along. The second reason is that the bees can keep the moths out better than anything I can do about it. The third reason ties in with the first, for only once in the 20-odd years that I have been a beekeeper, have I had honey put in a stack of empty supers on the storage rack. That time was when a swarm found a winter-flight hole from which the cork had dropped and took possession without me knowing it. I found it out unexpectedly when I tore down the stack for some reason or other, when I didn't have my veil on. Yep, they got me good. Since then, during the honey flow at least, I store my supers full of empty combs right on top of strong colonies.

For the past two weeks my phone has been busy. About every beekeeper within phoning distance has called to ask my opinion on the damage that will be done, when our good but demanding Uncle tries out a wholesale spraying experiment to eliminate a lot of nasty bugs that have no business being in the neighborhood. How in heck do I know? Personally, I think the whole experiment is just so much tax money down the drain. If they make the stuff that they spray strong enough and use enough of it, possibly it might do some good. If they are just going to use up money for the fun of it by making the spray weak enough that it don't do any damage to foliage or beneficial birds and insects, the chances are also good that it won't have any effect on the bugs that they want to destroy. Why they pick a fairly populous agricultural community to try it out I don't know. Especially when the crops grown are likely to carry a potent residue.

What I have been telling people who are worried is that I don't think that it will affect their bees, and it looks as though I am right. They dosed us with fuel oil and DDT last week, and for all the effect it seems to have had, they might just as well have sprayed the North Pole with sawdust. A couple of people I know had some damage to clover plants by reason of leaf burn from the oil, but I didn't see any effects on my bees. But just the same I am a little scary about eating the strawberries that were just ripening when our benevolent Uncle sprayed to help us.

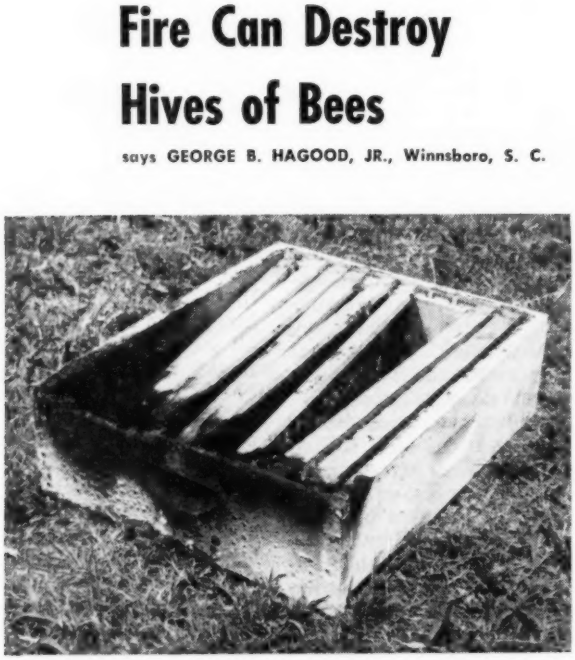
When we kicked about it, and speculated on the damage to our bees, we were told that we should move the bees, or cage them. Ain't that fun? Last Monday, they broadcasted that they were going to spray the next day. They didn't. Nor the next day. Nor the next. They did come on Friday, without warning, and gave us a good dose. But, as I said, it didn't seem to do much excepting to make everything stink of fuel oil for a while. Can you imagine keeping the bees caged for nearly a week during the start of the honey flow?

Also, when questioning about proving damage caused by the spray, we were told to collect 200 bees that we thought were killed by the spray and send them either to the State Agricultural College, or Beltsville. If their tests proved that the bees were killed by DDT, we would have a claim, but what good it would do us was not specified. Well, can you imagine combing the woods and fields in a two-mile radius to find 200 dead bees? If you did find them how would you know that they were yours. Bees that got theirs in the field wouldn't be home, so dead bees in front of the hive would not mean a thing.

But such is one of the woes of beekeeping. What can we do about it? Move to Little America?

Fire Can Destroy Hives of Bees

says GEORGE B. HAGOOD, JR., Winnsboro, S. C.



The remains of a once prosperous two-story colony. The results of a severe forest fire during a mid-summer drought. This super fell away from the burning mass and was not completely destroyed. The two-story brood chambers were a complete loss, along with three other hives at this location.

IT MAY be a little late to be telling this sad experience in my beekeeping. In 1954 we had one of the worst droughts in this section of South Carolina that I have ever witnessed. However, on the other hand, I made one of the best crops of honey that year. The honey crop was produced in the spring prior to the drought.

I had just about harvested this wonderful crop and disposed of it when the drought set in. As the summer days came and went, each was dryer and hotter. It wasn't long before much of the vegetation dried up and would burn easily. The swamps all dried out, leaving swamp litter which would burn. Forest fires during late July and August became as common and more severe than during the regular fire season of March. Things were so hot and dry that it was almost impossible to control the forest fires when they once got underway.

Since I live in the central portion of the state and have my bees located some distance away, near the Coast, I did not visit them too regularly after the honey season was over. However, I kept reading in the paper that they were having uncontrolled forest fires in that section of the swamp where my bees were located.

I Decide to Visit My Yards

It dawned upon me that I had better make a trip to my bee yards near the Coast to see if the fire had gotten into my bees and maybe do some fire protection work in and around the area. Well do I remember the day. It was on a Saturday in mid-August, still hot and dry. The distance from my home to my bee yards on the Coast is about 130 miles. I started early and about mid-morning began to arrive in the vicinity where the bee yards were located. All along the road there were evidences of the destructive fires which had blackened and destroyed the for-

ests and undergrowth. My imagination was running away with me. I could just see all my bees destroyed by fire.

Finally, in the grip of much anxiety, I arrived at the first location of my honey gatherers, but to my surprise the forest fires had not reached that area. I felt relieved. When I reached the second location, I was still happy as the fire had not gotten into that area either. Then I proceeded to the other locations, but as I drove on into the swamps I saw the fire had burned over that area and everything was charred black. As I approached I could see the hives standing. The white hives against the blackened background looked good to me. To my amazement, the fire had burned all around the hives, but for some reason the hives with the bees in them were not destroyed. A number of the hive bodies were scorched from the intense heat. On moving to the next bee locations, results were the same. Fire had done everything except destroy the hives with the bees.

My Luck Ran Out

Then I moved on to the last location where I had just a few hives. Here my luck had run out. The fire had destroyed four hives out of twelve at this location. It was sad to stand there and look at the charred ruins. There wasn't a living thing, not even a blade of grass, anywhere near. The bees from the other eight hives were working well, although some of the hive bodies were charred black on the sides.

I couldn't help but think how lucky I was to lose only four hives in all from one of the worst droughts and some of the worst forest fires in the history of this section. All this just made me fire conscious. Now I keep all dead grass, pine needles, and leaves raked back from all bee locations. Fire can be very destructive in a bee yard when the heat of summer is intensified by a severe drought.

CHANGES IN SUPERIOR HONEY COMPANY PERSONNEL

Superior Honey Company has announced two recent changes in their supervisory personnel. Shown in the picture are Ralph J. Stone on the right, partner in Superior Honey Company, who has been transferred from their Phoenix, Arizona operation to their Denver, Colorado plant. There he will assist Tom Ball, partner, who is in charge of operations in Denver. Mr. Wes Landvatter, shown on the left, returns to Superior Honey Company to resume his old position at Phoenix, replacing Ralph Stone as manager.

XUM

Small Beekeepers' "Dream" Extracting House

by MILTON H. STRICKER, Annandale, New Jersey

THE UNSUNG heroines of the bee world are those wives who have to put up with their husbands extracting honey in their kitchens. Yes, the kitchen is a convenient extracting house for the husband because it has water and electricity, and possibly some helpful kitchen utensils within easy reach.

With a little work, the hobbyist beekeeper can have all these things in his cellar, plus several other desirable features not found in the average kitchen, i.e., floor drain, privacy, and permanency. His extractor can be anchored permanently with stud anchors in the floor or masonry nails. He can install his own sink, and any other permanent refinements he finds necessary.

If he is in any way handy with tools (and I've yet to see a beekeeper who wasn't), he can stud in his favorite corner (second-hand lumber is good if available). Then, cover it with "flexboard" or any similar asbestos cement type of wallboard. This is easy to hang and is washable and stainproof. If this material is used, it might be well to lay out the extracting room so that there will be a minimum of cutting of these 4 x 8 sheets, since flexboard is hard on the cutting edge of a saw. Then, some plumbing, which he can do, to run at least cold water into his extracting room, if it is easily available. But, hot water can be piped too. There will be many uses for this. A minimum of electrical work, a light, and a receptacle or two, and he is ready for the fundamentals, an extractor, a settling tank, something to uncap into, and some method of separating honey from the cappings.

The extractor should be placed in such a position that it can be loaded by the operator from his uncapping position. There should be some method of holding those uncapped combs that are awaiting their turn in the extractor.

The settling tank should be placed on the observer's right of the extractor, if the operator is right-handed; vice versa for the left-handed operator. If the honey is "bucketed" from extractor to tank, the extractor's motor should be on the far side of the extractor to avoid drip.

The best extractor to buy is the one the small-time operator can best afford. Several in Jersey have saved half their honey money each year to buy small radials, which make extracting easier, faster, and less damaging to combs.

But, if you have a two-frame nonreversing basket extractor, you can still do good work, though extracting will be slower and the operator will have to work with greater care to keep frame breakage at a minimum.

Power Extractor an Advantage

There should be some power other than hand. Sometimes a second-hand electric motor can be obtained from your local appliance store quite cheaply. If you have to buy a new one at full list price, it is still worth every penny in labor saved. An electric motor can take so much of the labor out of extracting that once you have motorized your extractor, you will never go back to the crank.

To get the honey from extractor to settling tank, a honey pump is a good way, but many small beekeepers still

prefer the bucket. Yes, it's messy, but it is cheaper and some say it gives less air bubbles in the honey. A screen should be used over the settling tank to catch large particles of wax, and, by the way, honey should be left in the settling tank for 48 hours, and then only drained low enough that no colloidial material enters the can.

Many small beekeepers have been building a small strainer to remove most of this wax and debris before it enters the settling tank, thus the honey does not have to go through such a long settling period. The morning after extracting, honey can be run into cans with a minimum of foreign material, if one of these home-made Jersey strainers or clarifiers is used.

Essentially these strainers are metal trays about six inches deep, one foot wide, and three foot long. It is inclined so that its lower end rests upon the edge of the settling tank. The bottom of the tray is jacketed to hold a small amount of water and is the simplest, the water is warmed with an electric plate, or the steam exhaust of a steam uncapping knife. The more elaborate use a hot water heater element and a thermostat to keep the water temperature constant. Fine mesh screen hangs in the top of this tray to catch the wax as the honey is poured or pumped into the tray. However, simple or elaborate, this arrangement heats the honey so it runs quickly through one or two Root strainer cloths, the best on the market.

Handling Cappings

Next, and probably the biggest problem, is some place to handle the cappings as they fall from the knife. Probably the most popular with the small beekeeper in New Jersey is the old-fashioned capping press. Letting them fall in some sort of a tray, and then after draining, they are poured into a perforated basket, and then pressed with a "cider screen", tightening the screw as the day progresses.

Those small beekeepers who own radials, prefer to whirl the cappings dry, a much better arrangement than the press, but still leaving much to be desired when the dry cappings are to be removed after whirling.

For those blessed with a small boiler for steam generation, the small-size Brand capping melter seems to be the answer to this pressing problem, yet even that seems a little large for small production. There are a few plans of home-designed melters, mostly following the pattern of the Brand melter, only about half the width in most cases.

There is still much room for improvement in the way that the excess honey is removed from the cappings. I look forward to the day when something better than present day systems is devised.

As for the uncapping knife, steam is good, but for the small beekeeper, electric is probably simpler. Of course, if the small beekeeper starts off with a cold knife in a bucket of water, he will soon save his pennies to buy something better than this.

Altogether, when you add up the essentials, it runs into quite a sum for the small beekeeper, but the fixing up of this "dream" house is usually a labor of love for most beekeepers.

Talking to one recently who has an extracting room about like described in this article, I found that his four colonies have produced 700 pounds of surplus honey in the past three years, and have netted 25c a pound retail, or $175.00 which has all been put back into an extracting room where work is a pleasure and next year's crop will be extracted easier, and more efficiently. The price is soon forgotten in the pleasure of one's hobby.

Our Cover Picture

This is a back yard apiary in Richmond Heights, N. Y. Wearing a bee net to protect his head but with arms uncovered, James McCaskill, who has 16 colonies, examines a frame of comb to check on progress. Most beekeepers wear gloves, tie pant legs at ankles when handling bees or opening hives. Basic hive usually consists of a bottom brood box with a storage box above it and a roof. Upper supers are added as colony members multiply and honey supply grows to prevent overcrowding and thereby discourage bees from swarming. — Photo from Black Star, Graybar Bldg., New York.

XUM

Swarm Control and More Honey by Changing Old Combs for Foundation

by ARTURO WULFRATH, Mgr. Miel Carlota, Cuernavaca, Mexico

The two owners of Miel Carlota. At left, Dr. Hans J. Speck, and at right, Mr. Arturo Wulfrath.

IT IS estimated of great value for each modern beekeeper to have a great amount of old combs not only on the hive but also in storage for further use. He considers it his pride and also his capital to have many of these old combs of dark color, some even black. A comb recently constructed can break during the transportation and when extracting honey, which the old ones never will do.

In the first ten years of our beekeeping activity we also have been convinced of the value of the old combs but then we found out that we were wrong, at least concerning the combs in the brood nest.

In the first years of our Miel Carlota we increased the number of our hives very much, dividing all our colonies year for year, but with several thousand colonies we had to slow down the speed of increasing, so that more and more colonies went from one year to the other without being divided, and only from that moment on began the trouble with the swarms.

At first we tried to suppress that swarming by the known means. As we always have been working with queen bees not more than one-year old selected for several years out of colonies which never had a swarm, the age of the queen could not be the cause of the trouble. So we kept a close watch on the storage space in our hives during the weeks before the crop comes in, giving to each colony up to five supers. It did not work, then we thought of the Demaree swarm control plan but soon we found that for a greater number of hives it takes too much time and for us working with a single Jumbo brood chamber, too much money, as we had to buy queen excluders and extra brood chambers with frames and foundation.

At least we discovered that the new colonies and the old one which had been divided very seldom lost a swarm and that these nearly always came from colonies, which had not been divided for two or more years.

Thinking about the difference be-

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Queen rearing station at the back of the Miel Carlota building.

tween divided and not divided colonies we found only one and this was that the divided and the new colonies had to construct several combs over foundation while the others had no work of this kind to do.

This gave us the idea to take half of the oldest combs out of several not-divided hives in different apiaries during the poor season which here is the summertime when the regular brood-nest does not occupy more than three or four combs, and replace them with frames with full sheets of foundation.

The success was excellent. Only one of 100 colonies, treated in that way during the first year tried to swarm. Meanwhile many queen cells were found in 23 per cent of the other colonies at the experimental apiaries.

From that year on we change during the summertime in all our colonies 50

Miel Carlota's own gas station situated beside the honey house.

XUM

Bee laborers' houses constructed by Miel Carlota.

per cent of the older combs for foundation so that we never have a brood comb longer than two years in the hive. We have the great satisfaction that by this relatively simple method swarms out of queen-right colonies have become very rare.

Before harvest time our hives are full of young bees, whose wax-producing glands are in main activity and who have to produce wax at this state of their life. If they find in their hive only constructed or finished combs to receive the honey or brood, they do not know what to do with the wax, and the only way out is to swarm and start a new colony. In this new hive there is a tremendous activity in cell construction and all the young bees are happy to apply their wax, which nature commands them to produce.

If we give our young bees in the weeks before the harvest time the opportunity to apply their wax on recently introduced foundation and give plenty of storage room, a young queen, and avoid the other well known causes of swarming, most all of our bees will stay home.

Another Reason for Comb Foundation

There still is another very important cause for the constant renewing of the comb foundation in the brood nest.

A couple of years ago Russian investigators discovered the use of old combs to be a mistake. They found out that the size of a bee depends on the interior size of the cell from which she has been born. At each birth the cover of the chrysalis or cocoon stays adhered to the cell wall and will naturally reduce the inner capacity of the cell after birth of each bee. On account of this reduction of the cell, the bee will also be subsequently smaller.

At the beginning with a new comb this reduction is almost of no importance and the tiny skin left inside the cell does not reduce notably the size of the bee born from this cell. But just imagine the now very perceptible reduction on a two-year old comb. Thirty four generations of bees may have been born, so the size of the present generation will almost be reduced 20 per cent.

When the size of a bee is 20 per cent

Above: One of Miel Carlota's apiaries near Cuernavaca.

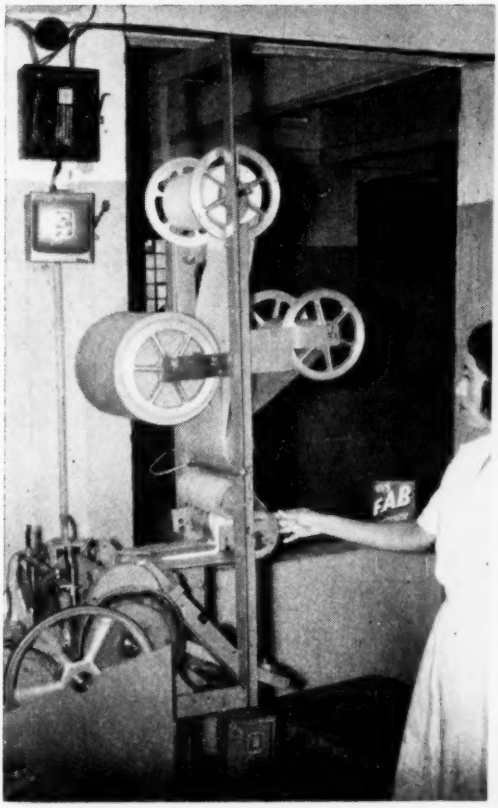
smaller than normal, the honey sac, deposit for nectar of the bee, has 55 per cent less capacity which means that the bees born out of old combs will collect only less than half the normal crop, than bees born out of new combs working the same as normal sized bees. The beekeeper who works with all his brood combs more than two years old will harvest only half of what should be his normal honey crop. If his combs are even older his honey crop will reduce still to a lower percentage.

Concluding we could say:

1. Old combs provoke swarming which may cause a loss of up to 50 per cent of our crop.

2. Old combs reduce our honey crop considerably, reducing the size of the bee and its honey sac.

[Whether or not bees remove cocoons from cells of brood combs periodically to maintain the correct size or diameter seems to be a moot question. Some colonies in Root's apiaries have combs that have been in use over 25 years and the bees emerging from these combs appear to be normal in size although we have not measured or weighed them.—Ed.]



Right: Triplay foundation machinery from Miel Carlota attended by a nice-looking Indian girl.

XUM

A Handy Hive Tool

as used by LOYD E. HUNT, Red Bank, New Jersey

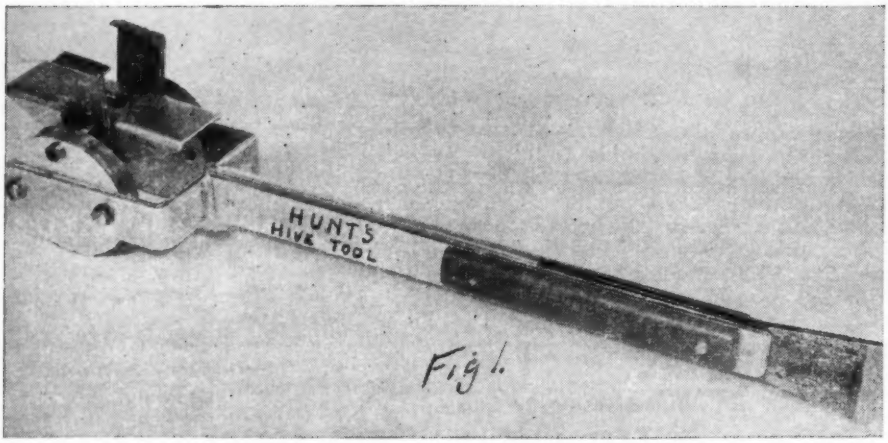


Fig 1.

Fig 2

Instructions for Pulling Frames

1. Rotate the clasp on its axle so that the prongs point outward and spread apart as in Fig. 1.
2. Place the tool so that the clasp straddles the top bar and the shoe rests on it at one end of the frame, with the handle toward the middle. Push the tool toward the end until the shoe strikes the end board of the hive. See Fig. 2.
3. Press the clasp end against the top bar with one hand and lift the handle with the other hand so that the handle rotates upward and over the clasp end as in Fig. 3. The first few degrees of rotation closes the clasp, then the frame starts to lift in response to the pressure between the cams and the adjacent frames.

4. When the handle has been rotated through 180° the clasp unlocks itself and the tool may be lifted off. However, since it is usually necessary to repeat the operation on the other end of the frame, it may be more convenient to reverse the rotation of the handle back to the starting point. This reverse operation unlocks the clasp in the necessary position for the next pulling, otherwise step one must be repeated.

Lift the tool off of the top bar and repeat operations one through four at the other end of the frame. The wedge at the end of the handle serves to pry the remaining frames apart. The under side of the spring clasp (which is made of heat-treated berylium-copper) should be kept lubricated (vaseline or grease) to prevent abrasion of the bearing points.

[**For those who do not manipulate their hives frequently and permit them to become propolized, this tool or one similar to it would doubtless serve a useful purpose. Bee inspectors who come onto hives that have not been opened for a long time might find such a tool useful.—Ed.**]

COOKING WITH HONEY

SUBSTITUTION OF honey for all or part of the sugar in some baked goods adds to color and flavor and improves texture. Work by Kansas Agricultural Experiment Station, Manhattan, has also shown that use of honey to sweeten cakes is now commercially possible for the first time.

This work, aimed at expanding bakery use of honey, is done under contract with ARS Eastern Utilization Research Branch, Philadelphia.

Cakes with a high honey content stay moist and fresh-tasting longer than cakes without honey. But if more than a third of the sugar is replaced with honey, cakes may be flat and have a burned color and flavor.

Researchers controlled these undesirable reactions by raising the acidity of the batter during final baking stages. To do this, they used potassium bitartrate coated with a stearate, which melts and releases the acid near the end of baking.

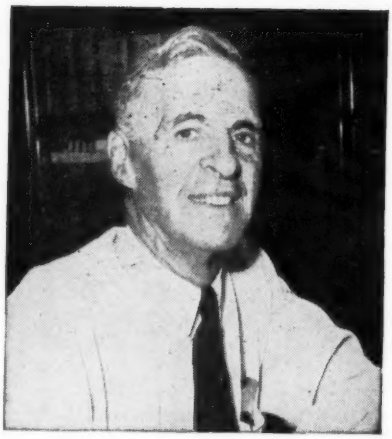
Honey — 5 to 50 per cent — added noticeably to the flavor and color of some cookies. Substituted for 6 per cent of the sugar in white breads and up to 12 per cent in dark breads, honey gave a rich flavor and aroma to both products. The bread-making process did not have to altered.—Agricultural Research, U. S. Gov. Printing Office, Research, United States Government Printing Office, Washington, D. C.

XUM

A Talk to Beekeepers

Based on Experience, Reading, and Associations with Beekeepers

By M. J. DEYELL



"Count Not Your Chickens"

WE HAVE all heard the old saying, "Count not your chickens before they are hatched". This can apply to beekeeping, especially when it comes to estimating the size of the crop one thinks he is going to get, even before it is on the hives or in the honey cans.

Sometimes prospects for a crop look very favorable but the honey flow does not materialize. This has happened to me more than once. I may have said previously that a honey crop usually sneaks up on me, perhaps when I least expect it. At other times when prospects look unusually favorable, the weather or other conditions are unfavorable for nectar secretion.

The moral of this seems to be: Always be ready for the honey flow by having colonies strong and supers on the hives, so that if and when the honey flow breaks, you are ready for it.

A Word about Conditions Early this Season

In this area, we had a winter fairly favorable for bees. During the winter we had weather suitable for good cleansing bee flights. Colonies started brood rearing the latter part of February and continued during early March. However, during the last few days in March and early April we had a big snow storm and some severe winter weather. This slowed down brood rearing for a time, and it is perhaps a good thing the cold spell occurred in order to check the queens in their egg laying. At any rate, this resulted in a saving of stores. When warm weather did eventually come the middle of April, the queens made up for lost time and colonies were soon sufficiently populous to take advantage of the spring honey flow.

Usually, during April and early May we find some colonies that need to be fed. This year our colonies had an abundance of stores, in fact, some queens found it difficult to find sufficient comb space for brood rearing. It was necessary to put a super on each double brood chamber colony in order that the bees could carry some of the honey upstairs to make room for the queen to lay. It is seldom that we have this situation in the spring. It seems likely that beekeepers in other areas of the North experienced different conditions.

A Word on Reversing Double Brood Chambers

This reversing now being recommended is a good swarm-control measure. However, the one thing about it I do not like is that it requires a considerable amount of lifting. When I was younger I didn't mind hoisting around deep brood chambers, even though they were quite well filled with honey. I can do it at the present time, if I have to but, to tell the truth, I am getting lazier each year.

In this area we have found that putting on one or two supers at the beginning of the spring honey flow, or, if there does not happen to be a spring flow at the beginning of the major honey flow, supply ample comb space for storage of incoming nectar and pollen also for brood rearing. We do not put queen excluders between the double brood chambers and the supers when the supers are first put on. If the supers contain dark drawn combs the

queens will readily go up into the supers to lay eggs. This relieves congestion in the lower chambers and is a swarm-control measure. I should have said that we place the queen excluder above the third story early in the season and then put supers on above the excluder, if and when needed.

When colonies give up the idea of swarming it is an easy matter to run the queens down out of third supers they may be occupying by smoking between the combs.

This does create one small problem however, namely, bees will usually start queen cells in the combs above the queen excluders. According to Hoyle, these cells should be destroyed on the ninth day. If they are not destroyed, virgins will emerge and one of the virgins may find a small opening through which to get out of doors to mate and later on a laying queen will be found above the excluder.

If there are no defects or small holes in the supers, the bees will eventually take care of the virgin queens.

Now, what I am getting at is this: The method I have described is simpler and easier for me than reversing brood chambers. I believe the method if properly carried out is just as effective. Perhaps I am wrong. If you think I am, please tell me.

In this connection, it should perhaps be said that a method that will work in one locality may not be suitable for other localities. We have to be broad-minded enough to realize that while the principles or fundamentals of beekeeping are the same the world over, the application of those principles vary somewhat, to meet conditions in different areas and latitudes of the world.

A Swarm in July

Most of us have heard it said that "a swarm in July isn't worth a fly", the reason being that swarms late in the season may not amount to much. I beg to differ with that statement. I once hived a large swarm the 10th of September, and that swarm stored enough honey the remainder of the season for winter and early spring food. It so happened there was a good late fall honey flow that year. In my opinion, it was much better to hive a late swarm than let it go to the woods.

And speaking of swarms, as I sat here dictating this talk on Saturday afternoon, June 8, a telephone call came in from a woman in Cleveland, Ohio, who said that a swarm had been clustered on one of her trees in the back yard since Wednesday. She wanted to know if it was lawful to keep bees in the city. I tried to help her out by giving her what information I could. But the strange thing was that the swarm should remain on the tree for three days. Perhaps the cool, rainy weather we were having prevented the bees from moving on to find a suitable home in a hollow tree or between the sidings of a building. I am assuming that scout bees that went out from the swarm, to hunt up a new home, may not have had a chance to return with their findings, due to bad weather.

A Word on Top Supering

In some of the northern areas of our continent, supering is the order of the day, especially in localities where the main honey flow is stored during this month.

The old so-called orthodox method of supering was to place the new supers being put on directly over the brood chamber, underneath the filled and partly filled supers. The top supering method is simply putting the new super on top of the filled and partly-filled supers.

Years ago, when I was in commercial honey production in northern Michigan, I did not have any drawn combs the first season, so, when producing extracted honey, I used supers containing frames with full sheets of foundation. I didn't know much about the business at that time so I put the new or fresh supers on top of the pile. I found that the bees entered these supers when they needed more comb space and when the supers below were being filled and the combs capped over.

Our Experience in 1932

During 1932 we secured a big crop of sweet clover and alfalfa honey in western Ohio. In one yard the supers were piled so high that it seemed out of the question to take the filled and partly-filled supers off in order to place the fresh supers on the bottom of the pile. And so we top-supered from then on and accidentally saved ourselves an enormous amount of work.

XUM

This picture of a sky scraper 10-story hive was sent in by Wilhelm T. Olesczenski, Marshfield, Wisconsin. Apparently the honey poured in during the season this picture was taken. It is amazing what a populous colony will do when conditions are just right.

Along about that time, I used to attend provincial bee meetings in Toronto, Ontario. One year I talked on top-supering. Some of the beekeepers couldn't swallow all I said and they told me so. I simply replied that if they wanted to do a lot of extra work by lifting off the piles of supers in order to put fresh supers at the bottom of the pile, then lifting the supers back on again, that was their affair.

The following year while attending the meeting, a commercial beekeeper (I have forgotten his name at the moment), who had around 1500 colonies up in the Georgian Bay area, entered the meeting room and said, "Jack, it works." I didn't know what he was talking about. Then he went on to tell me how that season they had an unusually big crop of honey in his area. He ran out of supers containing drawn combs and had nothing to put on except supers containing frames with full sheets of foundation. He debated whether or not to put these fresh supers at the bottom of the piles of supers or to set them on top. He finally decided to put them on top, and, to his amazement, the bees drew out the full sheets of foundation, carried the honey up into the top supers and stored honey in the combs. It is little wonder that he was excited about his discovery.

The heat from the bees naturally goes up into the top of the pile of supers which makes it possible for bees to draw out the full sheets of foundation and cure the honey.

While this chap and I were talking about the top supering, a beekeeper listening in said, "It seems too bad to make the poor bees carry the honey from the entrance of the hive away up to the top super." I told him that I would prefer to have the bees carry the honey up there rather than for me to handle so many filled and partly-filled supers.

Now, of course, there has to be a good honey flow on in order to have the bees enter the top supers after they are put on. As a matter of fact, if there isn't a good honey flow we don't get much surplus honey regardless if we super on top or underneath.

There is another advantage, as I see it, in top supering, namely, that at the close of the season the brood chambers are likely to be filled better with honey for winter stores than when the so-called orthodox method of supering is used. The bees naturally fill everything below before they will store honey above, and that is what they should do.

Occasionally we come onto some colonies that refuse to enter supers regardless of which method is used. When we find such colonies we usually lift a few frames of brood from the

brood chamber into one of the top supers, substituting empty combs for the combs of brood raised. We then put the new super directly over the queen excluder in order to try to enduce the bees to start working in the new super. This procedure is very seldom necessary if each colony is headed by a good prolific queen.

Removing and Extracting Honey

The novice is naturally anxious to take off some honey as early as possible in order to have some for his use. Supers of honey should not be removed until the combs are approximately two-thirds or three-quarters capped over. If too many unsealed combs are removed, the honey will likely be rather thin and may ferment.

A beekeeper with only a few hives of bees can brush the bees off the combs with a bee brush. He can take an empty super, then remove each comb and brush the bees at the entrance of the hive, then place the comb in an empty super. Be sure to keep this super covered, especially if there is a dearth of nectar at the time the honey is being removed. The bees may start robbing if combs of honey are not kept covered.

A bee escape is convenient for removing supers of honey. This bee escape is placed in the small opening of the inner cover after the wood block is removed. The inner cover with escape is placed underneath one or more supers ready to come off. In less than two days bees will have left the combs in the supers. They go down through two small pliable springs which close after the bees pass through and prevent the bees from getting back up into the supers. Be sure no small openings are left in the supers of honey, or the bees from other colonies will find the holes and rob the honey out of the supers.

A Perfect Comb

A frame which a few days ago contained only a sheet of foundation. Note how the bees have elongated the cells by addition of wax which they themselves secrete and apply in building comb. —USDA Photo by Forsythe.

XUM

Heartsease Smartweed
(Polygonum Persicaria)

Let's Talk about Honey Plants

HARVEY B. LOVELL,
University of Louisville

MR LESLIE L. BURR of El Centro, California, challenges the description of heartsease honey in my article in the May issue of GLEANINGS. He writes, "The heartsease honey I knew (back in Illinois in the '90's) and sold to the storekeepers throughout Grunday and the surrounding counties is properly described in the article on the heartsease plant as published in the 1917 edition of the ABC and XYZ of Bee Culture. It was a GOOD amber honey." Mr. Burr further discusses the use of the name smartweed for heartsease and writes that he considered them quite different plants, "As a bare-foot boy I learned about smartweed in the painful way."

I appreciate this letter from Mr. Burr but must beg to differ with his conclusions. The word smartweed is used by many beekeepers for all the species belonging to the genus **Polygonum** and **Persicaria.** The latest edition of the ABC states on page 333 "Heartsease, sometimes known as lady's thumb, knotweed, or smartweed, is naturalized from Europe and is widely distributed over eastern and central North America." The common species of heartsease (**Polygonum Persicaria**) is so-called because there is a dark spot on each leaf which sometimes resembles a heart in shape. It is not prickly in any way but there are two related species called tear-thumb which have sharp prickles on the stem which will easily tear the skin and bring blood and it is evidently to these that Mr. Burr refers when he wrote that he learned about smartweed "in the painful way". The name "smartweed" comes from the peppery taste of the leaves which are sometimes used as a seasoning in camp cookery. They are said to be so pungent that they will draw tears as quickly as cayenne pepper.

Now let us discuss the quality of heartsease honey! There is a natural tendency among many beekeepers to speak well of the kinds of honey which they produce and have eaten since childhood, a trait with which I heartily agree. However, one must be cautious about praising a kind of honey for table use which will not please the general public. Numerous beekeepers with whom I have talked agree that heartsease (or smartweed) has an unpleasant odor and a slightly strong flavor.

A local dealer, Herman Lose, tells me he can tell the presence of a tiny amount of heartsease honey in comb

(Continued on page 443)

Asked & Answered

Influence of Drone Comb in Supers

Question: Will bees store more honey in cells of drone size, in the supers, than in cells of worker size?

Answer: Bees apparently store as much honey in cells of worker size, in the supers as they do in cells of drone size. When they are compelled to build new comb for storing honey, they almost invariably build cells of drone size if foundation is not given, but this is apparently for the purpose of saving wax instead of indicating any preference of the bees for storing honey in the larger cells. Extracting combs containing cells of drone size are objectionable during the fore part of the honey flow, because the bees frequently leave those drone cells vacant that are immediately above the brood nest, apparently expecting the queen to lay eggs in them. If drone combs are used in extracting supers they should be sorted and supers containing such combs should be used late in the season after the impulse to rear drones has somewhat subsided.

Securing Government Loan on Honey

Question: Will you please send me details on how I can get a loan from the government on extracted honey.

Answer: Regarding Federal loans on honey, contact your County Agricultural Stabilization and Conservation Office. This may be shown in your area as CSS County Commodity Office. They should have the necessary documents and information to help you obtain the loan on your honey. In case any of these local offices do not have the necessary papers, you could refer them to the announcement of the 1957 Honey Price Support Program which appeared in the March 29, 1957 issue of the Federal Register.

First Flight of Young Bees

Question: Why do bees come out of their hive at a certain time and fly about with their heads toward the entrance? Does this mean swarming?

Answer: Young bees fly in this manner when taking their first flight. They turn their heads toward the hive in order to locate their home in reference to surrounding objects, so that they can return safely to their own hives. This is sometimes called the "play flight" of young bees. Usually this occurs shortly after noon. It does not indicate that the colony will swarm. When a swarm first starts to issue, some of the bees turn to look back as the young bees do in a play flight, but in the case of the issuing swarm the condition quickly changes to that of a rush of bees from the hive without turning to look back.

The Best Time to Requeen

Question: Can I requeen my colony with a better queen next spring as well as to do it this fall?

Answer: As a rule, it is better to requeen in July or early August than to wait until spring. A serious objection to requeening in the spring is that this would result in a break in egg-laying at a time when brood rearing is of greatest importance in rearing bees for the honey harvest. This is especially true in those cases in which the colonies fail to accept the new queen, thus prolonging the interval of no egg laying. When requeening is done during or toward the close of the main honey flow the resulting break in brood rearing does no harm in most cases and is sometimes even advantageous since the resulting bees can neither take part in the gathering of this season's crop nor be a part of the winter colony.

Uniting Bees by Newspaper Plan

Question: What is meant by the newspaper method of uniting bees?

Answer: The plan is as follows: Remove the cover from one of the hives to be united, spread over the top a sheet of newspaper having a few pinholes punched through it, lift the other hive from the bottom board and set it directly on top of the newspaper. The bees gradually enlarge the holes until they get through. In gnawing away the newspaper the bees unite without fighting. As a rule, the weaker of the two colonies united should be the one that is moved from its stand and placed on top of the other. If one of the colonies is queenless, this is the one that should be moved from its stand and placed on top of the other.

Just News

The **annual Northwestern Pennsylvania Beekeepers'** picnic and meeting will be held on Sat. July 27, at the Crawford County Fair Grounds, one-half mile east of Meadville just off Rt. 77. Demonstrations and display of bee equipment at 10:30 A.M. followed by picnic lunch. Coffee and lemonade furnished. Good program of speakers and contests for all.

The **Midwestern Beekeepers' Association** will meet at the home of Mr. Glenn Borchardt, Jr., at 5401 Newton Avenue, Mission, Kansas, at 2:30 P.M., Sunday, July 14, 1957. A very interesting program is planned and refreshments served after the meeting. Everyone welcome.—J. F. Maher, Sec.

The **Norfolk County Beekeepers' Association** will hold its next meeting on Sunday, July 14 at 2 p.m. at the Hill Top Farm, Norfolk County Agricultural School, North Street, Walpole, Mass. (near the Bubbling Brook Stand—corner of North Street and Route 109). A bee-tree hunt will be conducted by Bill Pearson of Wollaston, Mass. Please bring your refreshments and equipment for a cook-out. — Edith L. Colpitts, Cor. Sec.

The **Annual Summer Meeting of the Iowa Beekeepers' Association** will be held at Dakota City on July 13. Mr. Henry W. Hansen will serve as host. Mr. Hansen has developed an unusual demonstration to compare the development and productivity of three strains of bees. One of the features of the meeting will be a tour to this apiary, from 11:00 to noon. In the afternoon there will be a short program with three speakers, G. H. Cale, Jr., of Hamilton, Illinois, on hybrid bees, Walter Johnson, of Sioux City, on honey handling equipment, and C. D. Floyd, Chairman of the marketing Committee of the American Federation of Beekeepers, on honey promotion. There will also be an extensive exhibit of new honey handling equipment. — F. B. Paddock, Extension Apiarist.

The **Westchester County Beekeepers' Association** will hold its next meeting at the home of Mr. and Mrs. Alfred Roth, 146 Oak Street, Port Chester, N. Y., on Sunday, July 21st at 2:30 P.M. Mr. Roth will give a demonstration on extracting honey. Bee problems will also be discussed. Visitors and guests are we'come. Refreshments will be served.—Mrs. Alfred Roth, Pub.

The **Montgomery County Beekeepers' Association** will hold its next meeting with picnic at the Morris Arboretum Picnic Grounds, Chestnut Hill, Pa., July 27th 1957. The program will start at 10 A. M. with our honored speaker Mr. George B. Sleesman. Picnic at 12 noon and later a tour through the Arboretum and the beautiful site of the Bee Bee Tree (**Evodia Danielli**) in bloom. We extend a hearty invitation to all beekeepers of our neighboring counties and New Jersey. Please bring your picnic lunch.—Mrs. A. C. Storm, Sec.

The **seventh annual Beekeepers' field day of Worcester County (Mass.)** will be held on Saturday July 20, 1957, at Wallace Parker's Apiary which is located in the town of West Boylston on route 140. All activities will commence at 1:30 P.M. sharp regardless of the weather. So come, all you beekeepers, with your queen and workers too, to the great annual field day and see what you can do. Contests have been arranged by a committee in the field of frame nailing, queen hunting, etc., for all those who wish to participate. Prizes will be awarded to the winners. All members and guests are cordially invited. Bring a basket lunch for supper. Coffee and doughnuts will be served. Phillip Pike, President of the Worcester County Beekeepers' Association will preside.—Peter S. Stapor, Publicity.

The **Virginia State Beekeepers' Association** will hold its regular summer picnic in Lynchburg, Virginia, July 20, at Miller Park. This will be a basket picnic furnished by the attending bee-

keepers. The time 10:30 A.M. to 3:00 P.M. There will be several speakers, also a short business session. For those that like swimming there is a nice swimming pool near our meeting place. Come and bring the whole family.—Henry W. Weatherford, Sec.

A position as a Graduate Assistant in Apiculture will be available July 1, 1957, in the Department of Entomology and Parasitology, University of California, Davis. To qualify, an applicant should have a B.S. or M.S. in entomology and qualify for entrance in the Graduate School of the University of California. The graduate assistantship will enable the student to put in half time in graduate work leading to an advanced degree while assisting half time in the field of beekeeping during the school year. Full-time employment will be provided during the two summer months of July and August. The position pays $2219 per year.

Any graduate in entomology who is interested in continuing his graduate work in apiculture at the University of California should write to the Department of Entomology, University of California, Davis, as soon as possible. It would save time to enclose your transcript and a small photograph at the time of application.—J. E. Eckert, Apiculturist.

On Saturday, July 27, the regular meeting of the **Midd'esex County Beekeepers' Association** will be held at the home of Mr. and Mrs. Paul Bilizikian in Newtonville, Mass. The meeting will begin at 2 P.M. followed by a picnic supper. The summer meetings are a great favorite with all of the members and with the younger members of their families. Wisitors are welcome.—L. C. Proctor, Cor. Sec.

Beekeepers from a variety of states will be attending the **12th Beekeeping Short Course** of the Pennsylvania State University, August 12 to August 16, 1957. Professor Edwin J. Anderson, who has just been awarded a certificate of merit for his outstanding service to the beekeeping industry, will again supervise and instruct in the course.

Much of the work will take place in the University apiaries with members of the Course participating. Secrets of the hive, making a start in beekeeping, selection and assembling of equipment, spring management, swarm control, honey production, diseases, and marketing, are some of the subjects to be discussed.

Any individual, 16 years of age or older, is eligible to enroll in this practical course by writing to the Director of Short Courses, College of Agriculture, The Pennsylvania State University, University Park, Pennsylvania. — Fred C. Snyder, Acting Director of Short Courses.

Referring to the picture, page 303, May 1957, Gleanings, of the two bearded brother beekeepers of California who grew beards in 1949 for a centennial celebration and worn them since, because of a wager between them, we learn that the beards were recently shaved off simultaneously. We dare say their wives love the boys now, more than ever before.

The **Seventh Annual Field Day of the Maryland Beekeepers' Association** was held at the apiculture center at the University of Maryland at College Park on May 11. A speaking program in the morning was headed by James I. Hambleton and W. J. Nolan of the Beekeeping and Insect Pathology Laboratory at Beltsville. Mr. Nolan provided an interesting resume of research on multiple mating of queen bees and Mr. Hambleton spoke of the importance of honeybees to agriculture and outlined some of the latest research projects in apiculture. Harold L. Kelly, our president for almost 20 years and one of Maryland's outstanding sideliners, brought the group up-to-date on the bee season this year.

In the afternoon demonstrations geared mainly to teach the beginner how to handle and manage bees occupied the attention of the group. Maryland has been waging a vigorous fight against bee diseases so members brought in samples of combs for diagnosis and display so that everyone would have an opportunity to observe and know AFB, EFB, and sac brood. A honey-tasting identification contest seemed to be the sweetest item on the program.

XUM

At the business meeting President Harold L. Kelly announced his retirement and the following officers were elected: President—James M. Marsh, University Park; Regional Vice Presidents—John V. Lindner, Cumberland; R. D. Hammond, Frederick; Col. R. Boyer, Hollywood; Lloyd B. Shearman, Glen Arm; Corresponding Secretary—George J. Abrams, College Park; Recording Secretary—Leonard M. Llewellyn, Laurel; Executive Committee—Fern Wilson, Cumberland; John V. Lindner, Cumberland; Harold L. Kelly, Silver Springs; Arthur Strang, Silver Springs; James M. Marsh, Col. Rosswell Boyer, Cecil Cheek, Bel Air.

A threeday beekeeping course, July 17 to 19, held at Log Cabin, Horticultural Farm, Rutgers University, New Brunswick, N. J. R. S. Filmer, Instructor. Fees: New Jersey residents, $7.00; non-residents, $10.00.

The summer meeting and picnic of the **Empire State Honey Producers' Association** is to be held at the George Walthousen pavillion on Kelley Road, Mariaville (Schenectady), N. Y., Saturday, August 10, 1957. This is to be a combined meeting of the State Association and the Eastern New York and Suffolk County Associations. There will be games, prizes, a good program with guest speakers, and a white elephant sale. All beekeepers, their families and friends are invited. Coffee and ice cream provided. — Mary Cary Trippe, Sec.-Treas.

Correction in "Who's Who in Apiculture" Apiary Inspectors of America. — President, C. D. Floyd; Sec.-Treas., Lloyd N. Graham.

Tentative Program for Minnesota Beekeepers' Meeting. The summer

(Continued on page 442)

Tentative Program — Ohio State Beekeepers' Meeting July 27th and 28th

[The meeting will be held in the **new Youth Building,** Columbus, Ohio. This building is on 17th Ave. and 4th St., across from the Fair Grounds.]

Saturday A.M. July 27—Tom Keesee, Vice President, Presiding

10:00 A.M. Welcoming Address — H. Vandenberg, President.

Group Insurance for the beekeeper — Geo. Rehman

To be announced

1:00 P.M. Harry Vandenberg, President, Presiding

"Youth and the Future of our Industry" — Harry Vandenberg

Panel — Beekeepers' Problems — Chas. Reese, Moderator. Panel Members—Lyle Goodman, S. E. Bailey, Winston Dunham, Jack Deyell, and Emerson Long.

"Beekeeping in Southwestern Ohio" — Don Cooke

3:00-3:15 Break

"Our Queen Contest and its Purpose" —John Buchanan

The Coming Federation Convention and our "OHIO" Assoc. — H. R. Swisher

Demonstration—To be announced

6:30 P.M. Banquet—Chas. A. Reese, Toastmaster

(Charlie is planning to make this the cream of the meeting. TIP—don't miss the banquet)

Sunday Morning—July 28 The Church of Your Choice or

10:00 A.M. For those interested the films such as "Miracle of the Bee" and "Yours of the Land" and possibly others.

12:00 P.M. Lunch

1:00 P.M. Harry Vandenburg, President — Presiding

Bee Diseases — S. E. Bailey

Questions for the "Experts" — Panel Discussion — S. E. Bailey, Winston Dunham, Jack Deyell, Chas. Reese, Emerson Long. (Bring your questions)

3:00 P.M. Presentation (1958 Ohio Honey Queen) — John Buchanan, Chm.

The end of the program (Sunday) was planned to give you an early start for home; so come one and all and let's enjoy a good time at the 1957 OHIO Summer Beekeepers' meeting. We are hoping our friends from the neighboring and other states will plan to enjoy this meeting with us and we extend to all beekeepers a cordial invitation to do so.—H. R. Swisher, Sec.

Buy and Sell

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 18c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month, preceding publication.

HONEY FOR SALE

WE BUY AND Sell all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

IOWA honey, one can or truck loads. Russell D. Smalley, Beaver, Iowa.

CLOVER extracted honey in sixties. Abram Brubaker, Rt. 2, Lancaster, Pa.

ORANGE HONEY, also amber in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

CLOVER COMB HONEY—Ready about July 15. Write for prices. C. W. Schrader, Waterville, N. Y.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

WANTED—All grades of extracted honey. Send sample and price. Deer Creek Honey Farms, London, Ohio.

CASH FOR BEESWAX. Write as to quantity and we will quote price. Muench-Kreuzer Candle Co., Inc., Syracuse, N. Y.

WANTED—White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

BEST CASH DEAL for your honey (any grade) and beeswax. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

HONEY WANTED, all grades in 60's. Mail samples, advise quantity, best price. M. R. Cary Corp., 219 Washington Square, Syracuse 8, New York.

BEESWAX WANTED—Highest prices paid in cash or trade for bee supplies. The A. I. Root Company, Medina, Ohio; Council Bluffs, Iowa; San Antonio, Texas.

WRITE FOR SHIPPING tags and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 per cent saving. Walter T. Kelley Co., Clarkson, Kentucky.

WANTED: Light amber clover, fall flowers, buckwheat, and white clover. Send sample and lowest price. Cloverdale Honey Co., Fredonia, New York.

WANTED—Honey in 60-pound cans, also beeswax, any quantity. L. E. Allen, Tipton, Mich.

CASH for Amber and Buckwheat Honey. Best cash price for wax. Hubbard, Onsted, Michigan.

WANTED—Buckwheat and light amber honey. Eastern Food Products, 421 Bedford Ave., Brooklyn, N. Y.

WAX WORKERS render and buy beeswax, manufacture plain and WAVYWIRED foundation. Prices and shipping tags on request. WAX WORKERS, Ithaca, N. Y.

WANTED, chunk comb and extracted honey. Mail sample and price. Stoller Honey Farms, Latty, Ohio.

FOR SALE

WRITE FOR CATALOG—Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies and Comb Foundation. Onsted, Michigan.

THE BIGGEST BEE SUPPLY Catalog published (64 pages) free for the asking. Listing many items not found in other catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

FOR SALE—New heart cypress 10-frame bottom boards. KD, 10 or more, $1.00 each; 50 or more, 90 cents each; 100 or more 85 cents each. One nailed up sample postpaid, $1.25. Fred L. Poole, Elizabethtown, Rt. 2, Box 67, No. Car.

QUEENBEE PAINTING OUTFITS, $1.50 postpaid. Southwick, Apiaries, Waban, Mass.

FOR SALE—3000 60-lb. good used cans, 25 cents each. You come and get them. Will not ship at above price. Honeymoon Products Co., 39 East Henry Street, River Rouge 18, Mich.

100 shallow supers with combs in them, 20 honey supers, one extractor, 20 queen excluders. J. Garfield Fuller, Tully, N. Y.

GET OUR attractive price on good used cans, car-lots or less. First come, first served. R. W. Barnes & Sons, Oakland, Nebraska.

FOR SALE—Honey extracting plant, 24 ft. x 36 ft., extracting machinery, loading dock, large lot, 5-room home, water, electricity, mail route, school, churches, good hunting, fishing—Chippewa River. Good roads and honey-producing territory, Chippewa County. Bargain $4850.00, appointment only. C. G. HENDRICKS, 3522 W. Linden Pl., Milwaukee 8, Wis.

FOR SALE: Beekeeping business including equipment, shop, and two-apartment home. Centrally located in Portland, Michigan. Easy access to markets and supplies. Owner wishes to retire. Terms. Portland Realty, Portland, Mich.

FINAL OFFER TO SELL. Old Taylor Honey Co. Honey Packing Business. Packing facilities and market for several million pounds of honey per year. Operating Chandler, Okla., 35 years. Still a money-maker. Excellent building and equipment at 15% of present new cost. You need $10,000.00 cash. I must retire. L. D. Taylor, Harlan, Iowa.

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Carloads and less than carloads. Mail sample and best prices in all grades.
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BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for a certificate of inspection as a matter of precaution.

CARNIOLAN and CAUCASIAN Bees for 1957. Booking queens. Each, $1.00; 2-pound bees with queen, $4.00; 3-pound bees with queen, $5.00. Lewis & Tillery Bee Co., Rt. 3, Box 251, Greenville, Alabama.

CAUCASIANS—Very hardy, good working, gentle bees. "Hastings" breeder queens used. Young laying queens, $1.25 each, any number. Fred Brock, McDonald, Tenn.

PRODUCTIVE ITALIAN QUEENS—$1.00 each. 10 up, 90c. Shirl Baker, Rodney, Michigan.

THREE-BAND Italians and Carniolan queens, $1.00. Luther Pickett, Efland, N. C.

IT PAYS TO REQUEEN. Old queens in your hives cost a lot through lost production. Young queens pay for themselves and give a good profit besides. One super of honey difference in favor of the young queen is not too much to expect in most any location. We can furnish the best select young Italian laying queens from now until Oct. at $1.00 each; 10, $9.00; 25, $20.00. Prompt shipment. No disease. Air Mail postpaid. H. C. Short, Fitzpatrick, Ala.

400 colonies, all or part. Terms to responsible party. John Yanik, 16036 Edmore Drive, Detroit 5, Michigan.

SEEDS

HONEY PLANTS our specialty. Catalog on request. Pellett Gardens, Atlantic, Iowa.

MISCELLANEOUS

FOR SALE—Royal Jelly and The Little Queen Royal Jelly Extractor. Royal Jelly Enterprises, 1017 Los Carneros Avenue, Napa, California.

ROYAL JELLY in capsules. Box of 30 with 25 milligrams royal jelly, $2.50 to beekeepers, retails for $5.00. Box of 30 capsules with 50 milligrams, royal jelly, $4.35 to beekeepers, retails for $8.50; 25 milligram in bulk of 1000 capsules, $75.00; 50 milligram in bulk of 1000 capsules, $135.00. Postage paid in the U. S. Prairie View Honey Co., 12303 12th St., Detroit 6, Mich.

ROYAL JELLY BEAUTY CREAM. 1-oz. Royal Jelly beauty cream, $3.00; $20.00 per doz.; 2-oz. Royal Jelly beauty cream, $5.00; $38.00 per doz. Prepaid anywhere in the U.S.. Prairie View Honey Co., 12303 12th St., Detroit 6, Mich.

ROYAL JELLY—**Fresh, pure, and natural** ½-oz., $9.00; 1 oz., $16.00. Special prices to doctors and cosmetic firms. ALSO HONEY ENRICHED WITH ROYAL JELLY, O. K. Anderson & Son, Box 193, Coffee Springs, Ala.

ROYAL JELLY. We are distributors on a National scale for trademarked "Api-Vitalex" Royal Jelly products. Produced in capsule form, compounded in face creams or suspended in honey. Interested parties who feel qualified as wholesalers or franchise agents inquire airmail, "Api-Vitalex", P. O. Box 6674, Dallas 19, Texas.

MAGAZINES

Archiv fur Bienkunde, International journal for Bee Culture and beekeeping economics. Founded

in the fall of 1918. Oldest economic bee journal in the world. Praised again and again for its decades of independent leadership through many endorsements and advice as a valuable source also for the practice. Classic. Yearly DM 5.50. Any aspiring beekeeping friend will receive a sample copy. Biene-Verglag, Gielbach, Lindau, Germany.

Know interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English by the Bhupen Apiaries (Himalayas), Ramgarrh Dist. Naini Tal, U.P. India or available through them. Subs. Rs9/ or 15 shillings or $2.25 yearly. Sample copy post free for Rs $\frac{1}{8}$, or s2/6, or 40 cents (International Money Order). Payment in mint postage stamps of your country accepted.

YOU'LL LIKE GOAT MILK! Profit and health with dairy goats. Sample monthly magazine and information FREE. Dairy Goat Journal, Dept. T., Columbia, Mo.

BEE WORLD, the international journal of the Bee Research Association published monthly, contains the latest research reports on bees and beekeeping. With **Apicultural Abstracts** it costs $5.50 per annum, or $6.00 including membership of the Bee Research Association. Apicultural Abstracts only $4.50 per annum from the Hon. Subscription Secretary, Bee Research Association, 10 Barnett Wood Lane, ASHTEAD, Surrey, England.

INTERESTED in Angora Goats? Read the Sheep and Goat Raiser, Hotel Cactus, Box 189, San Angelo, Texas, the only ranch magazine published serving the Angora Goat industry. Subscription $3.00. Sample copy 25 cents.

TOO LATE TO CLASSIFY

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QUEENS OF QUALITY — 90c
25 or more 80c
J. F. McVAY JACKSON, ALA.

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Beauty may be only "skin deep" but in our queens it goes much farther. Enhancing their attractiveness are their even more important characteristics. Prolificness that maintains large populations right through the honey-flow, keeping the brood nest full of solid frames of brood, forces the bees to move the honey up into the supers where you want it. These beautiful HUSTLING bees are not impulsive to swarming, GENTLE under manipulation. Adaptability to varying climatic conditions have made JENSEN REARED QUEENS World Famous.

Dadant "Starline Hybrids		Jensen's "Magnolia State" Italians	
1-24	$1.35	1-24	$1.10
25-99	1.25	25-99	1.05
100-up	1.10	100-up	1.00

Reg. U. S. Pat. Off.

Clipped and Marked FREE. Air Mail Postpaid.
No order too large or small for prompt delivery.
JENSEN'S APIARIES MACON, MISS. U.S.A.
Phones 122M or 170J

QUEENS

ITALIANS CAUCASIANS

For the rest of this season we will devote most of our time to producing good queens for your needs in making increase, requeening or for those queenless colonies you may have.

PRICES

Lots of:	Queens	2-lb. & Q.	3-lb. & Q.	4-lb. & Q.	5-lb. & Q.
1 - 24	$ .90	$3.75	$4.60	$5.45	$6.25
25-499	.80	3.25	4.10	4.95	5.75

Tested queens $2.00 each

THE STOVER APIARIES

Mayhew, Miss.

The Rush is Over

We can fill queen orders on time so requeen with good queens while they are cheap. Our 100 per cent SATISFACTION has been good for 46 years. Let us prove it.

Untested queens $ .75 ea.
50 up ..... .65 ea.
Tested queens, 1.50 ea.

Merrill Bee Co.

P.O. Box 115, State Line, Miss.

LITTLE'S ITALIAN QUEENS
ROYOL JELLY

Booking orders for 1957 season.
1 to 24, $1.40 25 to 99, $1.30 99, up $1.20
Write for jelly prices.

LITTLE'S APIARIES

P. O. Box 122 Shelbyville, Tennessee

Top Quality Queens
Caucasian & Italian

1-24 ..... $ .80
25-99 ..... .75
100 up ..... .65

Farris Homan
Shannon, Miss.

U. S. Savings Bonds come in all sizes . . . . . and grow bigger every year.

JUST NEWS

(Continued from page 438)

meeting will be held at Detroit Lakes, Minn., and will begin at 9 A.M. July 26, with a special meeting on honey grades and honey house sanitation. The regular meeting will be called to order at noon on this date and will continue through Saturday, the 27th.

Speakers who have been contacted and indicated they will appear are:

Art Kehl, Topic: Wisconsin Honey Queens.
Henry Schaefer, Streamlined pollen feeding.
Prof. Callenbach, N. Dak. A.C. on honey promotion.
Warren Miller, Sec. of S. Dak. Beekeepers Ass'n.
Mr. Detroy, U.S.D.A.
Byron Allen, Minn. Dept. of Agri.
Leslie Little, Tenn. queen rearing.
Bobert Banker, Two-queen swarm control method.
R. B. Willson or an associate, Foreign Honey Markets.

There will be speakers from the U. of M. and office of the State Entomologist on phases of research and inspection. The usual Friday night fun-fest will be held with C. D. Floyd in charge. A noon lunch will be furnished by a catering service on Saturday at $1.10 per plate with music by the Detroit Lakes band.

Baking Contest

The second annual beekeepers bake-off will be held at this meeting with Mrs. Robert Banker in charge. Entries are to be made by 12 noon on Friday, the 26th. Minnesota honey to be used in all recipes with many prizes for both junior and senior entries.

Plan to be with us on these dates and enjoy the program which has been prepared.—F. Q. Bunch, Sec., S. E. Minn. Beekeepers' Ass'n.

Italian Queens
EUGENE WALKER
Rt. 2, Box 207
Live Oak, California

LET'S TALK ABOUT HONEY PLANTS

(Continued from page 434)

honey even when the beekeeper with the case of honey is half way across the room. He adds that he finds that any heartsease honey at all mixed with clover hurts his repeat sales and he is careful not to stock it. I personally have tasted several samples of heartsease honey and find that the odor is worse than the taste.

I asked Gilbert Perigo, chief inspector from Indiana, in the center of the heartsease country, his opinion about the honey and here is his reply, "You, of course, know that the reputation of this honey is anything but good, however, I feel that many people are overly prejudiced against it. From my experiences the 'smell' of this honey is much worse than the taste. This is especially true of comb honey from this source. After heartsease honey is extracted, it seems to lose quite a bit of this objectionable flavor. Personally, I can't say that I dislike the taste of heartsease honey, though I don't like the smell of it when it has been recently removed from the hive. The color of this honey . . . varies a great deal when produced under various conditions of soil and weather. Ordinarily this honey is light amber in color with a slight pinkish tinge. One disadvantage that I have found with heartsease honey is that it darkens considerably during the process of heating. I have seen hundreds of acres in Northwestern Indiana during a rainy season literally pink with these blooms."

Often bees do not turn to heartsease until clover is nearly out of bloom. It is well for beekeepers to watch this and remove as much of their clover honey as possible before it becomes mixed with heartsease.

Buckwheat belongs to the same family as heartsease and to me they resemble each other a little in flavor although of course the buckwheat is much stronger. People raised in buckwheat country often like the flavor of heartsease and some of this honey is shipped east. On the black lands of Illinois, heartsease is unusually mild and very light colored. A sample of comb honey sent me from this area was almost as white as clover with a mild flavor but still had the objectionable odor of heartsease. Anyone having experience with heartsease honey is urged to write me their opinion about it. Do you agree with the ABC and Mr. Burr that heartsease is a good table honey or do you agree with Mr. Perigo and the writer that the odor and the flavor are too strong for most people? I'll be glad to publish your comments.

THANK YOU:
For the Nice
PACKAGE BEE
Business you
gave us this spring.

We are proud of our ability to again ship your orders on time with practically no loss in delivery reported. Our queen yards produced the most satisfactory results ever, in spite of much cool and unfavorable weather.
Queens available through October.

	Reg. Strain	Island Hybrid
1-25	.90 ea.	$1.20 ea.
26-99	.80 ea.	1.10 ea.
100 up	.75 ea.	1.05 ea.

Queens clipped and/or marked on request only.

Rossman Apiaries

P.O. Box 133 Moultrie, Ga.

NORMAN'S
ITALIAN QUEENS
Untested 65c each
Prompt Service

BRIGHT 3-BANDED ITALIAN QUEENS. Highest quality, purely mated, good producers. Safe arrival and satisfaction guaranteed. State health certificate furnished.

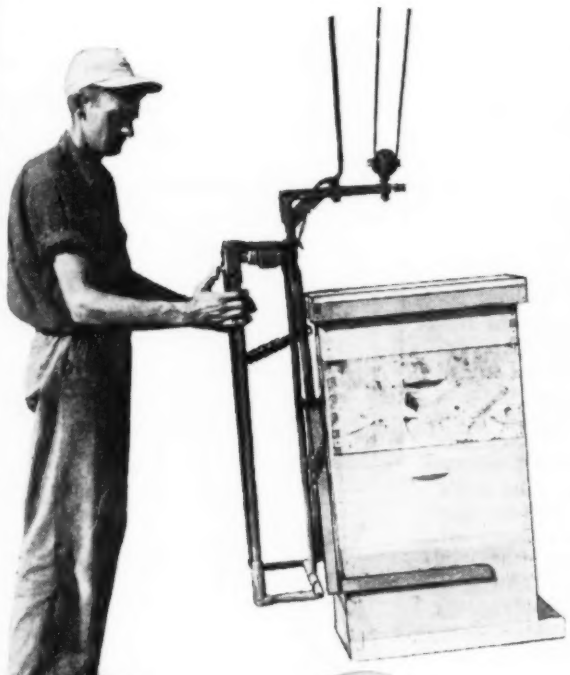
TESTED QUEENS	$1.30 each
2-lb. pkg. with queen	3.00 each
3-lb. pkg. with queen	3.75 each

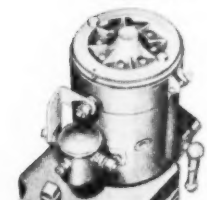
Packages shipped F.O.B. or via Parcel Post.

JOHN A. NORMAN
ROUTE 1 GRADY, ALABAMA

XUM

IT'S SO EASY





Press the button and lift up to five full hive bodies of honey. The hoist will hold the supers indefinitely and they may be replaced on the hive, set on the ground, loaded on the truck, or unloaded from the truck.

One battery in addition to your truck battery does the work and is recharged along with your truck battery. No need to run your truck engine in the bee yard under normal conditions.

Raise and lower the end of the boom with push buttons to let the load roll to or away from the truck. Hydraulic cylinder raises and lowers mast over four feet. Fits one and one-half ton and larger trucks.

If you don't like our design or prices we sell you the hydraulic pumps, cylinders, reversible motors, etc., so you can build your own. Write for circular.

THE WALTER T. KELLEY CO.

Clarkson, Kentucky

YORK'S QUALITY BRED QUEENS

Your Choice of Two Outstanding Strains

DADANT'S Improved Starlines or
YORK'S Quality Bred Italians

Italians		Starlines	
1-24	$1.00	1-24	$1.30
25-99	.90	25-99	1.20
100 up	.80	100 up	1.10

The Preference of Leading Honey Producers

Reg. U. S. Pat. Off.

YORK BEE COMPANY Jesup, Georgia

(The Universal Apiaries)

ITALIAN. . . ."GULF BREEZE". . . .QUEENS

As of this date, GULF BREEZE queens have enjoyed the largest demand on record. The reason is obvious. They are good and our service prompt. Large capacity.

PRICES:

1-24, 90c each 25-100, 80c each 100 or more, 75c each

BESSONET BEE COMPANY Donaldsonville, La.

BETTER-BRED QUEENS Three-Banded Italians

Our "Better-Bred" stock will please you. The quality you want is there. We have a large supply to fill your order promptly. Use them, and get the results desired. **Any quantity, 70 cents each.**

CALVERT APIARIES Calvert, Alabama

FLOWERS' QUALITY ITALIANS

That stand the test for honey-gatherers; gentle; prolific; bred from hives making 300 pounds, or over of honey. Health certificate with each shipment. Prompt live delivery guaranteed. All packages with young laying queens F.O.B. Jesup.

3-lb. pkg. with queen $3.25
4-lb. pkg. with queen 4.00
QUEENS: 1 to 99, 75c 100 up, 65c
1 or 1000
Tested Queens $1.50

ALL QUEENS AIRMAIL DELIVERED.

Phone Juno 4-2830 or Juno 4-2837

FLOWERS BEE COMPANY

Jesup, Georgia U.S.A.

3-BANDED

ITALIAN QUEENS

Airmail — prepaid
— any number
75c each

H. C. BRUNSON

P.O. Box 188 Ph. 2161 & 5303
HAMPTON, S. C.

CRAWFORD UNCAPPING MACHINE

(Continued from page 405)

form into stratas accordingly. The honey nearest the bottom escapes through the by-pass which maintains a constant level within. The wax from the upper strata overflows at a slightly higher level.

Steam is supplied from any source or generated by the gas burners mounted below. One inch of water is supplied through an opening shown in Fig. 3. The closing cap is mounted at the end of a length of flexible metal pivotally mounted to swing the cap over the opening. Explosion is impossible as the force within which is greater than atmospheric pressure is allowed to escape through the cap. Little additional water is required as the result of rapid evaporation of steam returning repeatedly to the boiler.

XUM

WILBANK'S — ITALIAN QUEENS

For your summer and fall queen needs we offer you an outstanding Strain of Three-Band Italians and can furnish Select Young Laying Queens promptly on receipt of your order. Caged fresh from our yards and Rushed to you Prepaid by Air Mail

Prices

1-9, $1.00 ea. 10-49, 90c ea. 50 up, 80c each

Tested Queens ..... $2.00 each

Quality Does Not Cost — It Pays

THE WILBANKS APIARIES Claxton, Georgia

SMITH'S QUEENS

We can supply our high quality three-banded queens until October. Wherever you work bees, North, South, East, or West, you are close to us by air mail. Let your orders come — you will be satisfied.

Selected Queens

1-9, 75c ea.; 10 or more, 70c ea.

N. B. SMITH & CO.

Calhoun, Alabama

Booking orders now. Over 30 years a shipper. Send for Free Circulars.

BLUE BONNET APIARIES

Weslaco, Texas

ITALIAN QUEENS

22 YEARS QUEEN BREEDING

Write for special prices.

Will have them till Oct. 1st.

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CHAIN REACTIONS PRODUCE STEADY SALES

(Continued from page 395)

dividual understanding of local problems which often results in increased efficiency in production and marketing, and a reduction in unit costs, a fact which will insure a greater net return to each member. No beekeeper who derives the major part of his income from beekeeping can afford not to belong to both his national and his local organizations. They are the "watchdogs" for his welfare and the instruments for the future improvement of the honey industry.

In summary: Steady sales are usually the result of a "chain" of interrelated circumstances or factors among which are the following:

1. Keeping a neat, well planned bee yard.
2. Maintaining a sanitary, efficient honey house.
3. Knowing the honey you produce.
4. Knowing your customers.
5. Putting up an attractive package.
6. Maintaining an attractive road side stand.
7. Using effective advertising.
8. Maintaining a price that will insure a reasonable profit.
9. Joining beekeepers' organizations.
10. Emphasizing sales.

Any beekeeper who practices the above essentials for good business is sure to improve his own business and at the same time help to elevate the standards of the entire industry.

Now - - QUEEN TIME. Time for QUALITY QUEENS - -

Values of **Real** Old-Time "Hard Dollar", at prices everybody can now afford - with

DADANT STARLINE Hybrid Queens

1-24	$1.30
25-99	1.20
100-up	1.10

GARON'S 3-BANDED Italian Queens

1-24	90c
25-299	80c
300-up	75c

DADANT'S STARLINE HYBRIDS

Reg. U. S. Pat. Off.

Upon request, queens clipped, marked, or clipped and marked free.

GARON BEE COMPANY **Donaldsonville, La.**

Caucasian Queens

1 to 9	$1.20
10 to 48	1.10
50 and up	1.00

Howard Weaver

Navasota, Texas

QUEENS
By Return Mail
BRIGHT 3-BANDED ITALIANS 75c

KEEP US IN MIND for fine quality bees and queens. They are gentle, prolific, and honey producers.

2-lb. pkg. with queen	$3.00
3-lb. pkg. with queen	4.00
Tested queens	1.50

All queens postpaid. Packages F.O.B.

NORMAN BROS. APIARIES
Ramer, Ala.

ABBA — Select Bees — American Bee Breeders Assn.

CARNIOLAN and CAUCASIAN QUEENS

Now is a good time to requeen swarms and make increase with high producing and gentle Carniolan or Caucasian queens.

Queens ....$1.35 each, air mail
Discount on quantity.
$2.00 to foreign countries

W. D. REAMS
Box 87 LaBelle, Fla.

QUALITY BRED ITALIAN QUEENS

Breeders selected from our Michigan Apiaries for high production and hardiness.

Queens .....$1.00 each
After May 20th ... .75 each

All queens shipped Air Mail. No more packages this season.

Walter D. Leverette Apiaries
P.O. BOX 364 FT. PIERCE, FLA.

J. E. WING & SONS
43 Years Continuous Service
Italian Package Bees and Queens
Our Specialty
Knights Landing, Calif.

ITALIAN QUEENS

Fine selected strain by 45-year experienced queen breeder.
75c ea. 6 for $4.25 10 for $7.00

G. H. MERRILL
302 Beatrice, Greenville, S. C.

Be Sure to Write Us if You Have Questions on Beekeeping that Bother You.

XUM

Look for this Sign
When you Want
QUALITY AT LOW COST

Trade Mk. Reg.
U. S. Pat. Off.

KELLEY — "The Bee Man"

QUEENS

KELLEY ISLAND queens by the thousand are available now. If you are in a rush count on us for quick shipment by return air mail.

1-24 ..... 85c by prepaid air mail

25-up ..... 75c by prepaid air mail

THE WALTER T. KELLEY CO. Clarkson, Ky.

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